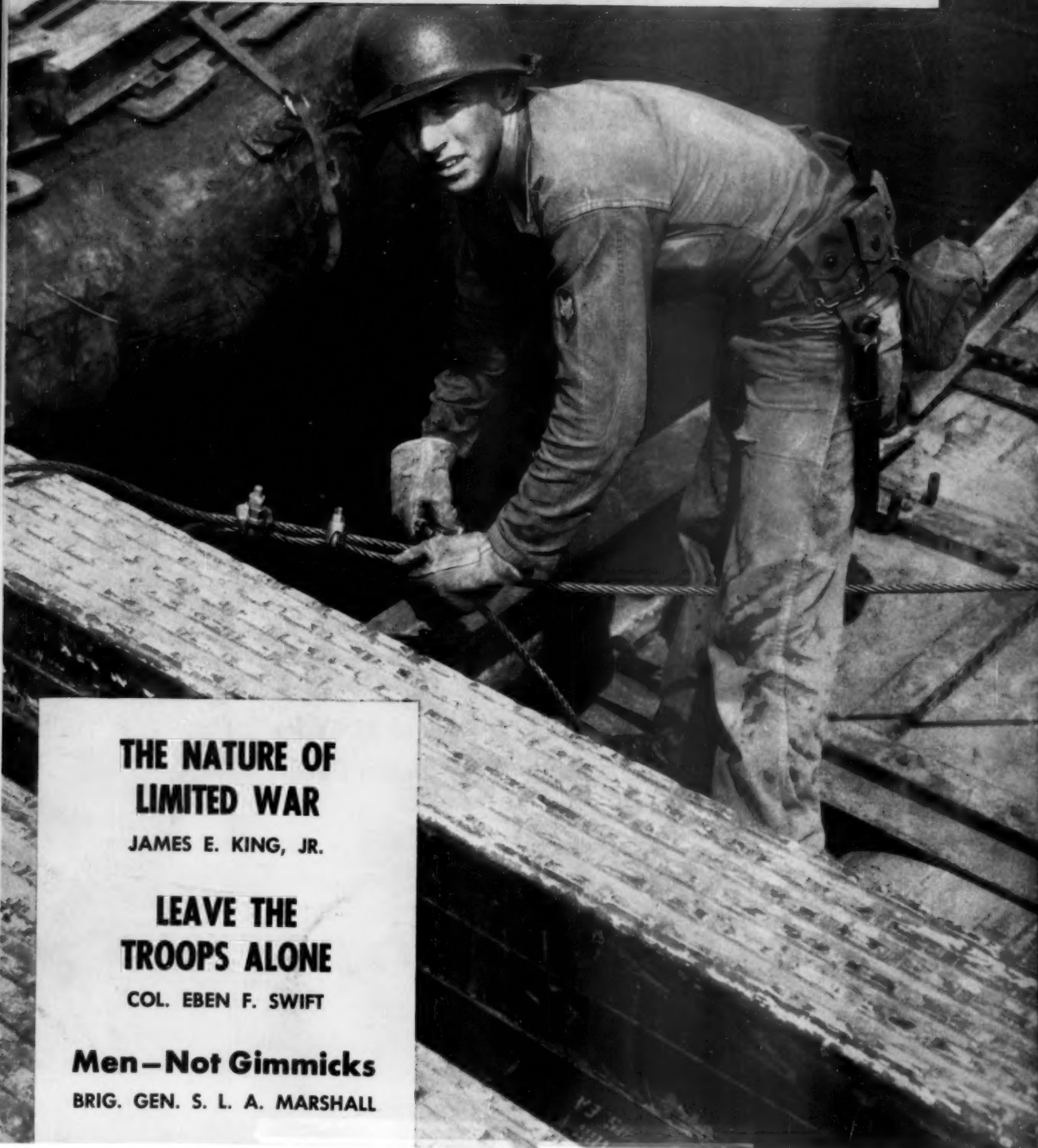


ARMY

AUGUST 1957 50¢



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ARMY is a professional military magazine devoted to the dissemination of information and ideas relating to the military art and science representing the interests of the entire Army. *ARMY* magazine strives to—

Advance man's knowledge of warfare in the fields of strategy, tactics, logistics, operations, administration, weapons and weapons systems.

Advance man's knowledge and understanding of the soldier as an individual, as a member of a trained unit, and as a member of the whole Army; emphasizing leadership, esprit, loyalty, and a high sense of duty.

Disseminate knowledge of military history, especially articles that have application to current problems or foster tradition and create esprit.

Explain the important and vital role of the United States Army in the Nation's defense and show that the Army is alert to the challenges of new weapons, machines, and methods.

Advance the status of the soldier's profession.

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THE MONTH'S COVER

Most of our cover photos show carefully posed soldiers, spick and span in sharply creased clothing. But this month we proudly present a working soldier, who recalls S. L. A. Marshall's apt "clean but not kempt" phrase. As a wrenchman for the 17th Armored Engineer Battalion's bridge company, Specialist 3d Class Harold Decker is tightening clamps on cables that secure the ponton bridge the company recently threw over the Main River near Grossauheim, Germany. As you would expect, the photo was made by a U. S. Army Signal Corps cameraman.

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THE MONTH'S MAIL

"The Noncommissioned Leader"

• Major William Gardner Bell's "The Noncommissioned Leader" in the May issue is excellent. Its timeliness in light of the MOS proficiency testing program for enlisted personnel is of interest to officers and noncommissioned officers alike.

How about reprints in order that copies can be made available on an individual basis to noncommissioned officers within a command? My interest is aimed toward the noncommissioned officers of the National Guard battalion to which I am assigned as advisor.

MAJOR HENRY T. WAGNER
Stratford, Conn.

• We didn't order reprints. However, if the demand proves sufficient we will undertake to do so.

Build on Confidence

• Colonel Mulcahy, in "Finding the Fighters" [June], mentions the importance of self-confidence in meeting stress situations. Research, measurements, training devices, and the like, are no doubt valuable in instilling technical competence after the services get the fighting men. However, it seems to me this article has greater significance for the home, school and church than for the Army. Self-confidence is a character trait that must be instilled in a person from infancy onward. The Army should not be expected to build self-confidence in its fighters, but to build on it.

Self-confidence is not created and nurtured by schools that subordinate true patriotism and the history of our glorious nation to "social studies," "community living," and "group dynamics"; nor by churches that subordinate fighting the good fight for God and Country to pacifism and "indifferentism."

My suggestion to the Army research team is to find out how many young trainees know and respect the following sayings and the conditions that brought them forth: "I have not yet begun to fight!" "Hold your fire! Don't fire unless fired upon. But if they mean to have war, let it begin here!" "Our country! . . . May she always be in the right; but our country, right or wrong!" "In the name of the Great Jehovah and the Continental Congress!"

Test such trainees, if any, and see how they measure up under stress. If the

results are encouraging, but the available test group small, why not look into our public schools and Bible classes and recommend character-building curricula?

(Miss) ANNE M. STOMMEL

USA Sig Pub Agency
Fort Monmouth, N. J.

Correction in Rank

• Just for the record, the German soldier on the inside cover of the May issue of ARMY is an Oberfeldwebel (SFC) rather than an officer. German noncommissioned officers with rank of sergeant and above wear their insignia on the shoulder.

ARMY is read from cover to cover by



German sergeant checks a U. S. machine gun

members of the West German Army as well as the United States Army.

LT. COL. JAMES CHRIETZBERG, JR.
APO 225, N. Y.

• Colonel Chrietzberg is right and so are the other readers who corrected us on this point. We relied on the caption, even though experience has taught us that cameramen are often careless caption writers.

Sorry!

• In the short biographical sketch following my Cerebration in the June issue, it is erroneously stated that I served in Korea during my tour of active duty. Practically speaking this is probably a matter of small importance, but since I spent all of my active-duty days in the ZI, it

might lead someone to believe that I have falsely claimed service in a combat zone.

JOHN P. FORSYTH
Hollywood 28, Calif.

• We are sorry we misinterpreted the biographical material furnished by Mr. Forsyth.

Birthday

• So you're going to let them get away with it!

Despite grand words about telling the Army's story, ARMY on its June cover notes fifteen years of Army aviation, while the Air Force publicizes its fiftieth anniversary.

By my calculation, the Air Force isn't more than ten years old. Of course, there's no point in trying to correct Air Force arithmetic, but the Army shouldn't yield so easily to false claims. When military aviation began fifty years ago, it was Army aviation, created to meet an Army need, and had little if any relationship to air power as the USAF defines it.

AUSA purports to be the Army's spokesman. Well, speak up!

This ground pounder congratulates Army aviation on its fiftieth anniversary!

CAPT. DAVID A. BECKNER
Fort Benning, Ga.

• Captain Beckner has a case. But let's be generous and not quibble over USAF's claim for fifty years of history since the very claim acknowledges and honors its Army parentage. As a wise Army officer said in 1948 when USAF became an independent service: "The USAF's heritage is rooted in the forty years it has been a part of the U. S. Army and its every future act will be in some part conditioned by its Army parentage. The USAF can no more renounce its origins than a son can renounce his parentage."

The Horrors of Latin Plurals

• I have withstood many of the horrors of war, including meatless days and "A" gasoline ration sticker, to say nothing of a refresher course in military courtesy at the hands of a group of new OCS-graduated lieutenants. But the violence done our mother tongue during this period of the cold war sends chills down my spine and puts rubber in my knees.

Two words, perfectly good words, are suffering severely at the hands of our officer corps to the point where I dread to read any military document that hasn't had the benefit of professional editing. Media is the accepted plural of medium, when the word is used in the sense of "an agency, means, or instrument: newspapers as an advertising medium." It should be "these media" and "this medium." Get it?

The other suffering word is *criteri*,

the plural of *criterion*. Please, fellahs, one *criterion*, two or more *criteria*. It costs no more to be right, and with the dollar inflated the way it is, sodamints create quite a hole in my budget.

COL. S. LEGREE

• Colonel Legree overlooked the much more misused data: we'll wager that ninety-nine times out of a hundred we see it preceded by this.

ARMY Promotes Esprit

• ARMY Magazine is to be highly commended. It gives me great pleasure to see that you emphasize *esprit de corps* in it, a factor that has been too long neglected and which is probably the most important in dealing with groups. Unit pride is essential in obtaining better discipline, a desire for higher goals which results in increased cooperation among personnel, and deeper respect for superiors. Thus, maximum efficiency is achieved from men working and fighting for a common purpose.

I believe that many articles have helped to promote this *esprit*. The authors are commissioned and noncommissioned, showing that the enlisted man's opinion is considered as greatly as the officer's. That is important, since now the average soldier will realize that he does have a say and that his individuality is being preserved.

Descriptions of new weapons and tactics also provide an additional boost to the serviceman because he knows he is being equipped with the most modern weapons and being trained in the most proved and scientific ways. With this type of knowledge, our fighting men will inevitably become inspired, confident, and proud to belong to the best fighting organization in the world, the U. S. Army.

Being a prospective career officer, I am naturally interested in all military affairs. Enclosed is a check to cover my membership in AUSA.

CADET ANDREW PAUL
ROTC, Dartmouth College, N. H.

It's a Pacing Stick

• What is the significance of the forked stick that the sergeant major is carrying in the illustration on page 32 of the June issue?

CAPT. ELLSWORTH NELSEN
Maryville, Mo.

• It's a pacing stick, and is used by him to preserve the exact length of the marching step. We're sorry we failed to mention it in the picture's caption.

Bring Back the Buck

• I'd like to express my appreciation for the fine and well-presented articles in ARMY, particularly "The Wearing of

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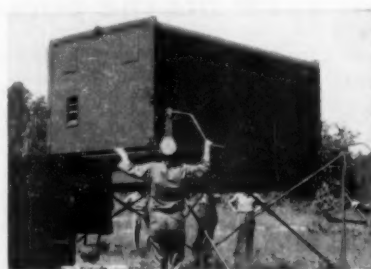
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the Army Green" by Major Multissimus and "Give the Corporal Back His Squad" by Colonel Juskalian in the May issue.

In reference to the proposed supergrades referred to by Colonel Juskalian, why not a new and distinctive insignia of rank for both sleeve and cap for the sergeant-major, and bring back the old three-stripe buck sergeant chevron that was truly the mark of the workhorse and backbone of the Army of bygone days?

SGT. SERGIO R. FELIPE

Ft. Riley, Kansas

No Enlisted Lawyers

• Major Kent's "Make Use of Our Enlisted Lawyers" [April] suggests that those enlisted men could replace officers as special courts-martial counsel and in other capacities hitherto restricted to commissioned officers. While the idea is theoretically a commendable economy measure, some difficulties are immediately apparent, particularly under peacetime conditions.

The very phrase "enlisted lawyers" is semantically loaded, for a soldier with such an educational background is ordinarily eligible for appointment to commissioned grade. The fact that he is not an officer may in many cases be attributable to the fact that he wants no part of the service and refuses to apply for a commission which might extend his obligation, or the fact that he has been found unsuitable for such appointment because of professional, moral, security or physical disqualification. Such a man is hardly the ideal choice to administer our system of military justice.

The second difficulty is psychological. In a special court, the absence of a Law Officer places upon counsel the task of safeguarding the procedural rights of the accused; Army practice does not even authorize a verbatim record of the trial. A court composed of line officers (or worse, partly of noncommissioned officers), no matter how conscientious, can hardly be expected to be impressed by the arguments of low-ranking enlisted counsel—and I say "low-ranking" because enlisted lawyers are almost invariably inductees with less than two years of service.

Third is the morale factor. The organized bar has criticized the military establishment for failing to provide its lawyers the same appointment privileges and allowances enjoyed by other professional personnel. If the Army takes the position that any professional noncombat job can be done well by a specialist third class, then we might as well have enlisted surgeons, enlisted chaplains and, for that matter, enlisted adjutants general.

LT. ERNEST E. MARLATT
JAGC-USAR

Houston, Texas

*New Cessna YH-41 delivers top performance
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Cessna's all-new YH-41, recently purchased by the U. S. Army for its air arm, combines the latest in design and engineering advances to give operating and maintenance performance never before experienced in the helicopter field!

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FRONT AND CENTER

Regular Army Appointments

The Army has selected 1,032 Reserve officers for appointment in the Regular Army in the grades from second lieutenant through major, in the first step of the fiscal 1958 augmentation program.

In making its selections from the more than 22,000 applications, the Regular Army Augmentation Board recognized the fact that many young officers were at the point of deciding whether or not to remain in service, with the result that the bulk of this initial list consists of such officers.

The permanent Regular appointments include 578 second lieutenants, 333 first lieutenants, 102 captains and 19 majors.

Approximately 4,500 more R.A. appointments are scheduled in this program, with a second list expected by January 1958 including all grades up through colonel.

Reorganization in Far East

In the interest of economy and simplification, new command structures, designed to conveniently handle future unit deployments, were installed in the Far East and the Pacific on 1 July.

General I. D. White became Commander in Chief, U. S. Army Pacific (USARPAC) with headquarters in Hawaii, which functions under the Commander in Chief, Pacific (Admiral Felix B. Stump). His command controls all Army forces in the Pacific to include Hawaii, Korea, Japan and the Ryukyus. Army forces in Hawaii will be centralized under one headquarters using an augmented command group and staff of the 25th Division.

In Korea, General George H. Decker became Commander in Chief, United Nations Command, as well as Commander, U. S. Forces Korea, and Commanding General, Eighth Army. The old designation in Korea of USAFFE/-8A passed out. UNC moved from Tokyo to Seoul, with status as a separate major command because of the unre-

solved political and military situation.

A separate and subordinate headquarters was set up for Eighth Army at Camp Zama, in Japan, commanded by Lieutenant General Charles D. Palmer. Designated Headquarters, U. S. Army Japan and United Nations Command and Eighth Army (Rear), General Palmer's command will carry out the functions and operations of Army forces remaining in Japan.

U. S. Army Ryukyus Islands and IX Corps (USARYIS/IX Corps), commanded by Lieutenant General James E. Moore and formerly under Commander in Chief, Far East, is now within the command of USARPAC. In addition, General Moore is High Commissioner of the Ryukyus.

100 Per Cent Air Defense

During Senate Appropriations hearings, the Deputy Chief of Staff for Research and Development, Lt. Gen. James M. Gavin, told the subcommittee that one hundred per cent effective missile defense was the Army's goal and that with the rapid development of defense missiles such a system could be developed.

General Gavin challenged the basic doctrine that air power is the decisive factor in modern combat. He said that in the future, the "greatest deterrent" will be not strategic air power, but missile defense against attack.

"In the missile era," General Gavin predicted, "the man who controls the land will control the space above it. The control of land areas will be decisive."

Concerning service roles and missions, General Gavin told the subcommittee that the Army should have the role of defending the United States against intercontinental ballistics missiles.

Army Mans Satellite Stations

Army teams comprising 6 officers, 98 enlisted technicians and 17 civilian experts drawn from the Corps of Engi-

neers and the Signal Corps, are to man six earth satellite tracking stations extending from Fort Stewart, Ga., to Santiago, Chile. All members were trained at Army schools and the Naval Research Laboratory to operate special electronic equipment that will track the man-made satellite when it is placed in orbit during the International Geophysical Year now under way.

The tracking stations (each manned by a captain, 15 enlisted men and 3 civilians), built under direction of the Army Engineers, will prove by electronic observation that the satellite is orbiting, determine the exact position from the earth's surface of its presumed elliptical orbit as it passes above and between two of the stations, and collect data on conditions existing at altitudes reached by the satellite. The Army Signal Corps will establish, maintain and operate the program's far-flung communications network.

Fit of Army Greens

The new uniform, which becomes mandatory for winter wear by officers and optional for enlisted men on 1 October, comes in such a wide variety of sizes that most soldiers should be able to get the correct fit with a minimum of alteration. Greens are available in both odd and even sizes. For instance, the coat comes in 60 different sizes, including supplementals, and the trousers have 65 size variations.

Family-Rate Allowances

Service members below E-4 with four years of service will be ineligible for overseas cost-of-living allowances under new joint travel regulations. Interim Housing, Regular Station and Emergency Evacuation also will not be paid at the higher rates to officers and enlisted men who bring families overseas without authority or who marry in the duty-station areas without obtaining permission where required. Personnel ineligible for family-rate allowances will be paid cost-of-living dif-

ferences as having no dependents. Regular station allowance is now authorized for the armed forces in 93 overseas areas. Germany, Japan, Okinawa and Hawaii are the principal locations where they do not receive a cost-of-living differential when quarters or mess facilities are not furnished.

About 20,000 servicemen who would not be entitled to the family rate under the revised JTR but were receiving the higher payments on 5 June 1957 will continue to do so until current tours are completed. The services have until June 1958 to adjust foreign-service tours unless exceptions to the standard tours are approved by the Secretary of Defense.

Study Dependents' Dental Care

A Dental Advisory Committee of the Army Surgeon General's Office is studying possible changes in the dental care provisions of the dependents' medical care program. This program is one of the most criticized of the new Medicare system.

Dental care is now available only in remote areas of CONUS, or only if necessary to medical or surgical treatment. In overseas areas, it is provided on a space-available basis.

A summary of medical services provided and the limitations on free services is in DA Pamphlet 21-91.

Nuclear Jobs for EM

The Army wants 25 enlisted candidates for training in nuclear power plant operation beginning at Fort Belvoir, Va., about 15 January 1958. Students will be taught plant operation and maintenance and serve as supervisory or instructor cadre for future nuclear installations. Training includes a six-month basic academic course in nuclear technology and a similar amount of operational instruction at the Army's first package power reactor.

Applicants must be E-4 or higher with at least four years to serve, less than thirty-five years of age, and high-school graduates. Complete information on qualification and application is in Circular 621-7 (21 May 1957).

Non-Pay Drill Status for USAR

Some 22,000 USAR officers were transferred to a non-pay drill status, on 1



Gen. Charles L. Bolte congratulates Lt. Col. Abram S. Benenson for presenting the best scientific paper at the first Army-wide Science Conference. In recognition of his accomplishment the AUSA presented Colonel Benenson \$750 from its Sustaining Membership Fund.

FIRST ARMY SCIENCE CONFERENCE

More than 400 military and civilian Army scientists at the first Army Science Conference heard scientists present classified work for critical comment and discussion. Sponsored by the Army's Chief of Research and Development, the three-day meeting at the U. S. Military Academy in June gave Army scientists and engineers an opportunity to meet and exchange information in related fields and to gain an appreciation of the scope and depth of the Army's scientific effort.

Ninety-six papers were presented and awards were presented to the authors of the ten most outstanding.

Lt. Col. Abram S. Benenson, Medical Corps, a researcher at Walter Reed Army Institute, received the top award for his paper entitled "Enzymatic Debridement of Full Thickness Skin Burns," which described a new method of treating severe skin burns. Presentation of a check for \$750 to Col. Benenson was made by General Charles L. Bolte, retired, a member of the Council of Trustees of the Association of the United States Army. AUSA provided the funds for this award from its Sustaining Membership Fund. The nine other award winners were Civil Service employees for whom recognition and award funds were provided under the Army Incentive Awards Program.

Leaders of the first Army-wide Science Conference include Lt. Gen. James M. Gavin, Chief of R&D; Dr. Ragnar Rollefson, Chief Scientist of the U. S. Army; Dr. William H. Martin, Director of R&D; and Lt. Gen. Garrison H. Davidson, Superintendent of USMA, the host.



1957 REUNIONS

1st Armored Division. 23-24 Aug. Bellevue-Stratford Hotel, Philadelphia, Pa. Write Col. Leo B. Conner, 1529 18th St., NW, Washington 6, D. C.

1st Cavalry Division. 30 Aug.-2 Sept. Congress Hotel, Chicago. Write Col. Edmund P. Stone, Box 201, Pomona, Calif.

1st Infantry Division. 23-25 Aug. Sheraton-Park Hotel, Washington, D.C. Write Arthur L. Chait, 5309 Germantown Ave., Philadelphia 44, Pa.

2d Armored Division. 2-4 Aug. Benj. Franklin Hotel, Philadelphia. Write R. F. Perry, PO Box 172, Alexandria, Va.

4th Infantry Division. 8-10 Aug. Shoreham Hotel, Washington, D. C. Write Joseph Summa, 132 Avenue V, Brooklyn 23, N. Y.

5th Armored Division. 8-10 Aug. Manger Hotel, Cleveland. Write Lawrence Sawchak, 6308 Ackley Road, Parma 29, Ohio.

5th Infantry Division. 31 Aug.-2 Sept. Hilton Hotel, Chicago. Write Lloyd A. Rader, 451 E. Clay Ave., Roselle Park, N. J.

6th Armored Division. 29-31 Aug. Hotel Statler, Cleveland, Ohio. Write Martin J. Lawlor, 2150 Raymond Ave., Latrobe, Pa.

6th Infantry Division. 6-8 Aug. Penn Sheraton Hotel, Pittsburgh. Write James E. Wittstruck, 4201 B St., Lincoln, Neb.

7th Armored Division. 16-18 Aug. Hotel Statler, NYC. Write Irving Osias, 1064 Nelson Ave., Bronx 52, N.Y.

10th Armored Division. 31 Aug.-2 Sept. Commodore Perry Hotel, Toledo, Ohio. Write R. L. Bollinger, Pioneer, Ohio.

12th Armored Division. Aug. Write LeRoy W. Bensel, 2557 Main St., Lawrenceville, N. J.

17th Airborne Division. 9-11 Aug. Hotel Statler, Buffalo. Write W. A. Roncone, 802 Hiland Ave., Coraopolis, Pa.

24th Infantry Division. Aug. Write Edmund F. Henry, First Nat. Bank Bldg., Attleboro, Mass.

27th Infantry Division. Sept. Write Lawrence Reagan, PO Box 1403, Albany, 1, N. Y.

29th Infantry Division. 31 Aug.-2 Sept. Lord Baltimore Hotel, Baltimore. Write B. F. Cassell, 505 W. Fayette St., Baltimore 1, Md.

34th Infantry Division. 27-29 Sept. Nicollet Hotel, Minneapolis. Write Junior F. Miller, Red Horse Armory, Des Moines, Iowa.

37th Infantry Division. 30 Aug.-2 Sept. Hotel Sheraton-Gibson. Write Jack R. McGuire, 21 W. Broad St., Columbus 15, Ohio.

77th Infantry Division. Nov. Write J. Woolwich, 28 E. 29th St., New York 16, N. Y.

80th Infantry Division. Aug. Write Charles Gainer, Hotel Yorktowne, York, Pa.

81st Infantry Division. Aug. Write John Scholz, 843 W. Agatite, Chicago 40, Ill.

83d Infantry Division. 15-17 Aug. Hotel Roosevelt, NYC. Write Col. Robert H. York, Tactical Dept., TIS, Fort Benning, Ga.

88th Infantry Division. 15-18 Aug. Hotel Benj. Franklin, Philadelphia. Write Tony Mildner, 2443 S. Woodstock St., Philadelphia 45, Pa.

90th Infantry Division. 13-15 Sept. Hotel Leamington, Minneapolis, Minn. Write Howard A. Stotler, Box 1151, Beverly Hills, Calif.

96th Infantry Division. Write Minor Butler, Box 144, Mount Erie, Ill.

100th Infantry Division. 6-8 Sept. Hotel Statler, Hartford, Conn. Write Thomas C. Burdett, 114 S. Main St., Taylor, Pa.

101st Airborne Division. 30-31 Aug. Penn-Sheraton Hotel, Pittsburgh, Pa. Write Col. Leo B. Conner, 1529 18th St. NW, Washington 6, D. C.

title designations should assist students in learning and understanding radio nets and ease the work of experienced radio technicians.

Highway Research Project

The Department of Defense will cooperate with the American Association of State Highway Officials in a two-year series of road tests to determine behavior of different types of pavements under varying traffic conditions. Data will be used to resolve problems related to construction and use of public highways.

Tests will be conducted by the Highway Research Board of the National Academy of Sciences over six specially designed test tracks to be constructed near Ottawa, Ill.

The Army Chief of Transportation will coordinate all defense participation, and will furnish a special unit of two medium truck companies (to be known as U. S. Army Transportation Corps Test Support Activity) for the duration of the tests. It will move to Ottawa before the summer of 1958 when construction should have progressed sufficiently to accommodate test traffic.

General Officer Shifts

Lt. Gen. Clovis E. Byers to USA Element, OSD . . . Lt. Gen. James E. Moore to High Commissioner of Ryukyu Islands . . . Maj. Gen. William C. Baker to USAFFE/8A . . . Maj. Gen. William N. Gillmore to Chief, JUSMAG, Greece . . . Maj. Gen. Emil Lenzner to Deputy CSigO . . . Maj. Gen. Philip F. Lindeman to USAREUR . . . Maj. Gen. Edmund B. Sebree to Fort Ord . . . Maj. Gen. Thomas M. Watlington to EUCOM . . . Maj. Gen. Robert J. Wood to Assistant Chief of R&D . . . Brig. Gen. Charles H. Chase to XVIII Abn Corps . . . Brig. Gen. Ellsworth I. Davis to Engineer Division, Pacific Ocean . . . Brig. Gen. Jean E. Engler to ODCSLOG . . . Brig. Gen. Alva R. Fitch to MAAG, Belgium-Luxembourg . . . Brig. Gen. William L. Hardick to OSD . . . Brig. Gen. Curtis Herrick to USARPAC . . . Brig. Gen. Morton E. Townes to Assistant CofT . . . Brig. Gen. Sidney C. Wooten to Fort Devens.

Retirements

Lt. Gen. Alonzo P. Fox . . . Lt. Gen. Laurin L. Williams . . . Maj. Gen. John R. Hardin . . . Brig. Gen. James H. Banville . . . Brig. Gen. Henry J. Hoeffer . . . Brig. Gen. Walter M. Johnson . . . Brig. Gen. Francis A. Kreidel . . . Brig. Gen. Charles H. McNutt . . . Prof. (Brig. Gen.) Thomas D. Stamps.

July in a move to gain the maximum number of six-month enlisted trainees within budget limits and space ceilings.

Funds previously earmarked for paying 9,000 officer mobilization designees and 13,000 officer students in USAR schools will be transferred to permit enlisting additional recruits in the troop-unit program, particularly in the six-month group. The change will not affect training opportunities for USAR students and mobilization designees. These officers will continue to serve not more than seventeen days of active duty for training with pay each year, and all present provisions for promotion and retirement point credits remain in force. Staffs and faculties of USAR schools will remain on a 48-drill pay status plus

not more than seventeen days of active duty each year.

New Radio Net Designations

A new simplified system of short titles for identifying artillery radio nets has been adopted by the Department of Communications and Electronics of Fort Sill's Artillery and Missile School. Simplification was accomplished by giving an associated letter title to each of the seven basic radio nets. New titles are: C, command net; F, fire-direction net; I, intelligence net; L, light-direction net; R, sound-ranging net; S, survey net; T, target-area net.

The obvious advantage of the change is that the short title bears a logical connection to the full title. The new short-

**Vertol tests
world's first Tilt-Wing
VTOL Research Aircraft**

The new Vertol 76 is a true Vertical Take-Off and Landing (VTOL) aircraft, an experimental vehicle that casts a large shadow into the future.

With its ability to take off, hover and land like a helicopter it is independent of all but the most rudimentary landing area. Yet it flies from point to point with the dispatch of a turbo-prop passenger plane.

In this pioneer air vehicle the wing and rotor-propellers tilt as a unit through a 90° arc at the will of the pilot. For vertical flight he rotates the wing upward. To fly level he tilts the wing forward. Given a small runway, he can set the wing at the most effective angle to operate Model 76 as a Short Take-Off and Landing (STOL) aircraft and thus increase payload potential.



Engineers, if you are not already working for the government or defense industry, investigate job opportunities with Vertol.

The Model 76, soon to undergo flight tests, has been developed by Vertol for the Army Transportation Corps and the Office of Naval Research as part of the military's ceaseless quest for greater mobility and efficiency. From flight tests will come experience and knowledge applicable to the bright future of VTOL in military and commercial aviation.

Since 1943 Vertol has been a pioneer in research and development of vertical lift aircraft. It is now the largest independent manufacturer of helicopters. You may find that our know-how, our experienced personnel, our test facilities and our productive capacity can help you solve a problem.

VERTOL

Aircraft Corporation

MORTON, PENNSYLVANIA

THE ARMY'S MONTH

The United States Military Academy is asking its graduates why they sought appointment to West Point, what reasons led them to remain in or drop out of the service, and what changes, if any, they think should be made in the school, its curriculum, and its branch-choice procedure.

The 26 page quiz asks such questions as: "If you could, without question, change one thing at the Military Academy, what would it be?"

"What might better prepare the graduates of the next decade to take their places in the changing Army of the future?"

"Will our regular officer require more scientific know-how? Will he be required to speak and understand the scientist's language? Will the closer ties between economic, political and military areas call for broad socio-human understanding?"

The Panama Canal Company has retained

the Stanford Research Institute to make a long-range forecast of cargo tonnage and vessel transits that the canal may be expected to handle during the rest of the twentieth century.

Flight training has been authorized for Army ROTC cadets at the University of Alaska, University of Connecticut, Xavier University in Cincinnati, Mississippi State College, Oklahoma A&M College, Indiana University, and State College of Washington. The program qualifies ROTC seniors for a private pilot's license and creates a reserve pilot pool that may be used in event of a national emergency. During the past school year 235 Army ROTC cadets were awarded private pilot licenses, and the Army expects to qualify 625 more for careers in its expanding aviation program during the term coming up. Altogether 47 institutions now train cadets in the fundamentals of flying.

The Washington element of the 3d Infantry (Old Guard) is the latest addition to the Pentomic structure, and is now the 1st Battle Group, 3d Infantry (Old Guard), with five companies and a mortar battery. The five companies inactivated were Headquarters Company; Headquarters Company, 1st Battalion; and Companies E, F and G. Under its previous organization the Old Guard had two battalions of five companies each.

The five regional offices of the Army and Air Force Exchange Service have been renamed "service centers," and their heads are now "chiefs." The change more accurately reflects the mission of the service centers under the recently introduced new exchange concept of command management: to provide technical assistance and services to commanders in the operation of exchanges within their commands.

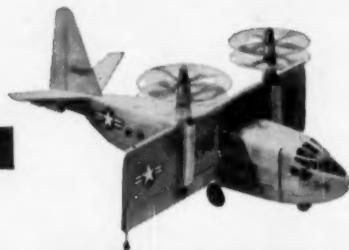
The Department of the Army, through AR 350-24, has instituted a foreign language proficiency program to give language training to career officers with aptitudes along these lines. It will be conducted within fund limitations, and since the capacity of the Army Language School is limited, it will be run on a controlled basis.

The Army's Flying Platform



Hiller research is now directed into three broad categories: helicopters, ducted fan aircraft, and tilt-wing propelloplanes.

The Air Force X-18, now under construction



The Marines' XROE-1 collapsible Rotorcycle

Atomic Age Demands Preparedness... MORE MOBILITY

Never before in history has mobility meant so much to military planning and tactics. No wonder all the services, particularly the U. S. Army, look to the air—and VTO*—for the only road to revolutionary progress.

* Vertical Take Off

Hiller Helicopters has one objective in its many research programs for the Army, Navy and Air Force: to transform ideas for better VTO aircraft, capable of widespread practical applications, from dreams to reality in the shortest time possible.

Engineers: write for opportunities with an industry leader in an ideal California locale.



HILLER HELICOPTERS
PALO ALTO, CALIFORNIA



OFF THE DRAWING BOARD...INTO BEING

The future is being shaped today on the drawing boards at Bell Aircraft. Important developments in such fields as guided missiles, aircraft, inertial guidance, nucleonics, rocketry, electronics and helicopters are advancing steadily.

The results of Bell's continuous research programs and progressive, straight-line thinking are reflected in such current realities as the GAM-63 Rascal, a long range strategic air-to-surface guided missile built for the USAF—the automatic Aircraft landing system, for the Navy, Air Force

and commercial application—the XH-40, first helicopter with turbine power—and the recently unveiled X-14, a new type aircraft that takes off and lands vertically but flies like a conventional jet.

With such major developments to its credit, a keenly creative, active organization like Bell Aircraft works confidently toward future contributions both to national defense and civilian industry—and to proving again and again that the surest way to get an idea off the drawing board and into being is to assign the task to Bell.

DIVISIONS AND SUBSIDIARIES OF BELL AIRCRAFT CORPORATION: AIRCRAFT, AVIONICS, GUIDED MISSILES, RESEARCH & ROCKETS DIVISIONS; BELL HELICOPTER CORP., HYDRAULIC RESEARCH & MANUFACTURING CO.



BUFFALO N.Y.

Reimbursement Muddle

If you operate a tight family budget and the monthly allocation for food simply can't withstand an unanticipated onslaught, such as the sudden appearance of half a dozen of *your* relatives for a two-week visit, something is going to give before the month is out. Rather than having you and your relatives go hungry your wife dips into her savings for a new fall outfit—a budget item that you had agreed was necessary sometime before.

When the next pay check comes in and you are allocating funds under the budget, your wife gently reminds you that she expects reimbursement for the money she spent from her clothing fund. But you don't agree. "No," you say, "the slate is wiped clean at the end of each month and the amount is non-reimbursable."

You wouldn't do that to your wife, but your government does it to its departments and agencies through Budget-Treasury Regulations that have received the approval of the Congress.

The gimmick in the regulation is that if a reimbursable expenditure hasn't been paid back by the end of the fiscal year, the amount is lost to the agency that expended it. This applies only to reimbursable services and not materials that may have been sold by one agency to another. For example, an Army motor-repair shop may repair an Air Force vehicle, expending, let's say, \$167.50: \$75 for materials and \$92.50 for labor (services).

This happens early in June and before the Army can seek reimbursement through the Department of Defense and the Bureau of the Budget the fiscal year comes to an end. Under the regulations the Army can proceed to collect the \$75 for materials but the \$92.50 for services is lost to it forever.

So what? you ask. Isn't this just a bookkeeping transaction between government departments? Not at all. That \$92.50 was voted the Army by the Congress of the United States for a specific purpose and after exhaustive hearings. When it was lost to the Army, a specific Army program could not be fully accomplished because of lack of funds.

This can run into sizable figures as in the Army's experience with Project Mercy for Hungarian refugees at Camp Kilmer, New Jersey. When this program began, the Army estimated that it would spend \$7 million and requested reimbursement from International Cooperation Administration funds. This kind of thing takes time but eventually the Bureau of the Budget approved the reimbursement of \$4 million. After the \$4 million was exhausted the Army continued Project Mercy from its own funds, thus delaying completion of certain projects that had been approved by the Congress and the President. Reimbursement of the additional \$3 million was requested by the Army but at the time this specific situation was reported to a Congressional committee it was touch-and-go whether the approval would come through before the end of the fiscal year.

Of all the military services the Army is hardest hit by this regulation since it performs most of this "cross-servicing." The Air Force does some and the Navy very little.

Obviously what is needed is a change in legislation that would not wash out these reimbursements at the end of the fiscal year. The way to do this is to remove reimbursements from the apportionment process which requires painstaking review and approval by the Department of Defense and the Bureau of the Budget. In other words, when the Army repaired that Air Force vehicle it should have been able to submit a statement to the Air Force for \$167.50 and be reimbursed directly by the Air Force.

If you don't reimburse your wife's clothing account she is not going to look too well dressed when the social season starts in the fall. So, too, with the Army.

When it spends money allotted a specific project on something else, it doesn't get the job done if the money isn't returned to it.

Get Behind the Cordiner Program

At about the time you read this a subcommittee of the Senate Armed Services Committee headed by Senator John Stennis may be holding hearings on the Cordiner report on service compensation. The exact timing of the hearings depends largely upon the progress of other business of the Senate. The nature of the hearings will be exploratory and educational.

Short of a miracle there will be no formal action by either branch of the Congress this session. The hearings will serve to keep the Cordiner Committee's report alive and create an atmosphere within Congress that should assure favorable and prompt response when Congress reconvenes in January 1958.

Mr. Cordiner and other members of the Committee can be depended upon to do their considerable best to show Mr. Stennis's subcommittee that the program of service compensation they have developed is the best possible answer to the military services' personnel compensation problem and is fair both to the members of the military services and the government. They will also stress that the full benefits of the program can be realized only if the entire package is adopted.

Mr. Cordiner has been an able and effective advocate of the Committee's program. So, too, have Mr. Hugh M. Milton, II, and Major General C. Rodney Smith, the Army members of the Committee. The U. S. Chamber of Commerce has endorsed the program, though this body, as you will recall, has been extremely critical of defense spending. The recent Conference of State Governors at Williamsburg, Virginia, has endorsed the program and so, too, have the state legislative bodies of California and Nebraska. In addition to the Cordiner bills introduced by Senators Symington and Goldwater and Representative Van Zandt, two other Representatives have introduced similar legislation. This plainly shows that Congress is not lukewarm to the idea of looking into the Cordiner program as fully as possible. What Congress needs now is an indication that its interest is shared by the rest of the country.

The national headquarters staff of AUSA is prepared to do all it can to further this program. We suggest that each of our readers consider where or how he can best help it along and then act. Clearly the big job right now is to keep the Cordiner program alive and in the public eye in order that Congress will find it in the public interest to pursue it.

Before closing, we feel impelled to dispel again the notion that the Cordiner program will help technicians in uniform at the expense of combat and combat support leaders and fighting men. Colonel Wickham's detailed explanation of the Cordiner program in last month's *ARMY* demonstrated that this is not so. This idea seems to have gained currency within the Army because the original push for what became the Cordiner Committee came from the Strategic Air Command which stressed the need for more compensation for its technicians. What needs to be understood is that the Committee during its deliberations went far beyond the original SAC concepts and the program it finally developed more closely resembles the concepts put before it by the Army than those of either the Air Force or the Navy, although both now support it enthusiastically. Simply stated, the Army advocated that all military skills (and this most certainly includes leadership, which is the most difficult skill of all) should be included in a compensation system that stressed meritorious performance of duty, rather than a long and unsullied, and possibly undistinguished, record of service.

4000 HOURS OF TESTING SHOWS

PRO



PERFORMANCE

Military guarantees—1024 hp, 0.66 SFC—proved by unofficial Model Tests. And these performance guarantees have been bettered in engines shipped for customer use by as much as 90 hp and 0.02 SFC! Performance? Definitely. But not at the expense of engine weight and size, for with reduction gear and ready to fly, the T58 weighs only 325 lbs; measures just 59 inches long and 16 inches in diameter. Its high power-weight ratio and low SFC offer helicopters outstanding improvement in their performance and operating efficiency.



RELIABILITY

Reliability of the T58 is based on the extraordinary durability its components have demonstrated in over 4000 hours of development testing. Typical results are (1) no catastrophic failures, (2) no compressor or turbine bursts, (3) no trace of combustor deterioration in unofficial Model Tests, (4) no demonstrated effects on compressor life as a result of deliberately induced stalls! Yet, this is just part of the T58's record of ruggedness. In special weather tests, the T58 demonstrated its ability to start in sub-zero temperatures and operate under severe icing conditions.

Rugged development test program, conducted by the Navy's BuAer and General Electric, proves T58 engine is a real "workhorse"—capable of revolutionizing helicopter flight!

GENERAL ELECTRIC T58 ENGINE HAS

W E N



CONTROL STABILITY

To prove the stability of the T58's controls and their responsiveness to a helicopter rotor system, General Electric has subjected the T58 to over 150 hours of tests on this rotor stand. Despite throttle bursts and sudden collective pitch increases, the engine's control system kept power turbine speed loss to as little as 1%! At the same time, the gas generator and power turbine regained efficient operating speeds as fast as 4 seconds! Here, certainly, is proof that the T58 can provide extremely accurate rotor-speed command, more efficient helicopter operation.

POWER SPLITTING

The T58's excellent power-splitting ability makes twin-turbine-powered helicopter flight truly practical. Dual engine runs show the T58's control (1) automatically proportions output of both engines, at any collective pitch setting, (2) allows full military power to be drawn from both engines, (3) holds power differential between engines, at all collective pitch settings, to a minimum, (4) virtually eliminates manual rotor speed adjustment, (5) prevents excessive engine or rotor speeds. General Electric Company, Section 233-8 Schenectady 5, N. Y.

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Brigadier General S. L. A. MARSHALL

Men—Not Gimmicks

HAD WILL ROGERS LIVED TO comment on the recent tableau at Redstone Arsenal, he would have led with his favorite line: "All I know is what I read in the papers."

To which the public would reply: "That ain't much."

Words need not be minced on this subject. The national audience remains unimpressed by anything except the growth of its own confusion. The pre-trial build-up, hinting darkly about great issues in the background, created suspense. The muffled letdown was complete. The people are left with a shut-out feeling which no pleadings about the sanctity of security will dispel.

Under extreme pressure, men, equally patriotic, react in multifarious ways. No one questioned that the man on trial at Redstone loved his country and is fiercely loyal to his service. The public believes that of Colonel Nicker-son. Yet of the multitude anxious for him, not more than a handful could say today whether the testimony heard in mitigation proved him a fool about his own business or more of a Solomon than the highest arbiter in the Pentagon. In that lay the irony of the spectacle.

Those of us who wallow in ignorance hardly deceive ourselves that the trial induced a proportioned perspective on technical problems or the relative merits of competing gimmicks. The main questions arising cast a longer shadow athwart the process of policy-making than across any weapon or project coming of it. There may be sound argument why one missile is better than another. But there is no argument for putting the cart foremost unless the object is to stall the horse.

THE PATTERN OF THAT FUTURE for which Thor and Jupiter were put in development is transparent to no one.

Millions of words have been written on what remains a guessing game. Our wisest minds in science and in fighting operations may pool their brains and drain their imag-

inations, but still cannot foretell what form warfare will take in the guided-missile era.

What evolutionary changes will overtake the fighting forces during their approach to it is beyond reliable prediction.

The transitional training requirements are necessarily obscure. Such is the lag that we are only now stirring to come abreast of weapon power already present.

Over what ranges forces will remain able to engage, come the day when the whole family of guided missiles becomes perfected, is not subject to reasoned calculation.

Whether any firm order of battle may hold the field under conditions as yet not more than vaguely glimpsed, and what manner of discipline might best suffice it, are still more fundamental questions, to be answered only by time and future experience.

The firm assignment of operational roles, when the dominant conditions limiting the utility of any service are still inscrutable, has the look of a vain administrative attempt to solve a mystery by boxing it before it becomes understood. Responsibility for development is another matter. It is a solid definable task of the present. But roles are the product of growth made by courage and vision as when the Air Force was born out of gunners, riflemen, signalers and mechanics, thinking in a new dimension.

When it recasts the fortunes of men and institutions, premature decision inevitably breeds bitter controversy. In such an atmosphere main objects become almost lost to sight during the frustrated pursuit of the tangential issue. It can happen to a squad beguiled by a stray pig, en route to a strongpoint. It can throw an army off balance.

THERE IS A PRESSING DANGER that the Army, hitching its wagon to a star, will forget to lock the tailgate. Its future—the main chance for the country—does not lie in what it does to gather to itself more and deadlier machines. The fundamental things

apply as time goes by. The Army workshop is man. Its critical mass is the fighting nature of the average American. Its end object is to keep our whole people not merely trained and ready to defend the national freedom but alert to why the hour permits no more comfortable alternative.

We have too long spoken of our first line of defense as if it were constituted on some remote frontier. Of that, in part, comes the illusion that it may be maintained by whirling mass destruction over greater distance. The first line is here at home. One of its sectors is in each Army person and its dynamic comes of what he does to convince his countrymen that the burden cannot be shifted from the backs of men and there is no easy way out.

Of course, the story's hard, to sell, but there can be no holding back for that reason. Some people at the Pentagon worry continually because the Army is the least popular of the services and they sweat out plans to right this condition. There are some conditions which one had damned well better learn to live with; this is one of them.

The Army can be proud that its way is not easy. It has ever been the national taskmaster. It is always the Army that makes the great demands, holding the nation to the hard line of duty and exacting the largest sacrifices. There's a little honor, if no particular glory, in that. We shouldn't expect to be loved. But with the help of heaven and a few marines, let's stay right. They also believe in this line . . . the party line . . . the line of foxholes . . . of willing men ready to look death in the eye.

There can be no retrograde from it without jeopardy to all we prize. Today the air is heavy with suggestions that augmenting machine power justifies a lowering of manpower. One step away is tomorrow's belief that miracles of defense may be wrought without hands and dedicated hearts.

FOR MY PART, I CAN IMAGINE no substitute for kids like Harrison Summers, Edsel Turner, Walter K. Crawford, "Big" Smith and other eager riflemen I have written about, each a one-man army. They are the power of America, and when their breed is gone we will be done.

When anyone tells me that any guided missile is worth the lot of them, it is not an attack on a few inspired, hardy warriors. It is saying that in this land military training itself has no real vitality, no essential virtue. It is saying either that national spirit prospers with no necessity to cultivate it sedulously as one would a garden, or that it

has ceased to weight the balance in the affairs of man. It is saying that in our search for mechanized, magic panaceas, we are forgetting the necessity for interpreting national living together as something dynamic, for understanding that only joined action and plans for doing great things together at some future date are capable of giving order, structure and cohesion to the collective body.

No more can a boxer lead with both his left and right at one time without falling flat on his face than may we in our service apotheosize the machine in war, and as the guardian of peace, without debasing the value, public prestige and self-esteem of our potential Army manpower.

Every such advance to a peak of supposed opportunity removes us farther from that expansive, assuring plain of uniformly trained and resolved national manhood, prepared for action.

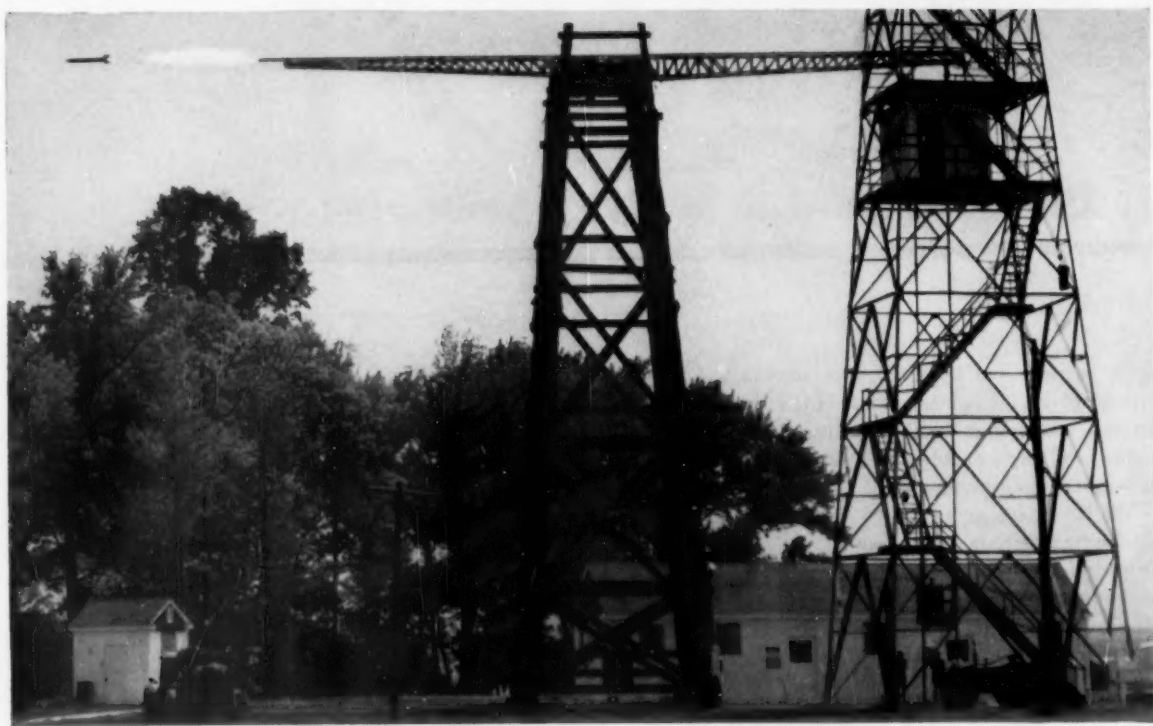
Which is the decisive value? If there is call to raise the question, it becomes time to point out that when we shrink man to nothingness we have conceded that military training and discipline are only of marginal consequence.

THIS CHILLY WORLD THAT science rebuilds for us grows colder by the minute. What is now in the making bears a mournful resemblance to Europe in feudal times. Protection lay within the walls of a castle. Bombards and fire could be thrown from the towers. When the drawbridge dropped, armed knights sallied forth. Swarming behind them came an armed rabble so badly trained that some had only the duty of bludgeoning other men to stay in line.

We, too, are gradually embracing the theory of a small fighting power élite—the SAC boys who will drop the big whammy, the ICBM mechanics, the Special Forces vertically erupting enemy country, the lone army corps which will hit airborne with the shock of a thunderbolt. . . .

What interests me about these concepts (and they are all fascinating) is that none by itself has any more promise than a stream ordered to rise above its source. You don't get butter without churning cream. You don't have military élan and mobility in any part without widely winnowing the fields of trained courage. To believe that shock forces may be kept primed higher, amid inertia, and the sloughing-off of the ideal of common service, is to imagine a greater miracle than the splitting of the atom.

A nation will get what it trains for—not more or less. When it overrates the products of science and undervalues the human heart, it bids for oblivion.



Experimental rocket being launched from tower at DOFL's Maryland test facility.

U. S. Army Photo

ELECTRONIC AMMUNITION THAT "THINKS" IS DEVELOPED AT ARMY'S DIAMOND ORDNANCE FUZE LABORATORIES

Since 1940, scientists and engineers at Diamond Ordnance Fuze Laboratories, with their industrial contractor counterparts, have made important contributions to electronic ordnance. These include the proximity fuze, greatly improved fuzes for antitank and other special ammunition, and, more recently, fuzing systems for guided missiles. Other basic results of DOFL's research and development teams are new electronic systems which increase the accuracy of measurement of distance, velocity and direction, new electronic and mechanical control systems, and new and radical components and materials. DOFL's main laboratory is in Washington, D. C., and it maintains an extensive test facility at Blossom Point, Maryland. Over 1400 scientists, engineers, technicians, and supporting personnel work in these centers.

Electronic ordnance was born in World War II. Ammunition of this type, a DOFL specialty, senses the presence, distance, and direction of a target and causes the warhead to function at the instant when it will inflict the most damage. Electronic control can be compared to having a sharpshooter in every piece of ammunition. The accurate effect is devastating.

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Deterrence and Limited War

JAMES E. KING, JR.

THE strategy of deterrence assumes that we can deny an aggressor his "worth of winning" by making certain he will recognize in advance that his move will cost him more than it is worth, while we can be sure, likewise in advance, that the deterrent sanction we propose will not cost more than it is "worth" to us. When you consider the difficulties of this two-sided calculus, it is evident that the chance of *miscalculation* is high indeed. Nor can we be sure that near-perfect calculation will not justify the aggressor's aggression. In the case of Hungary, for example, the Russian "worth of winning" far surpassed our "worth of winning"—on no less authority than that of the President himself.

The theory of deterrence was first developed by people who assumed that the possession of nuclear attack means gave us a decisive military advantage over the enemy. This being the case, we could provide an overwhelming sanction to take care of any margin of uncertainty and to preclude any calculation that would justify aggression in any case in which we had a real interest. This has been

changed by the advent of nuclear "plenty." The aggressor is now as free to put overwhelming force behind his aggression as we are to put overwhelming force behind our deterrence. We could still apply overwhelming force, but only of the kind that would, as James Burnham has said, "include ourselves in the target," because the enemy can retaliate in kind.

We should not delude ourselves. Deterrence is no panacea, and it is dangerous to treat it as one. It suggests that we still enjoy the decisive military advantage that went out with nuclear plenty. The danger that lies in "deterrence" is that by causing us to misunderstand the nature of the problem we face, it may disincline us to adopt the attitudes and to take the steps that are required of us. These dangers emerge clearly when we consider the nature and possibilities of limited war.

To avoid misunderstanding I must state first that the kind of limited war I am talking about is a war in which opposing interests of the nuclear powers are substantially involved, but in which there is no question on either side

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that national survival is in jeopardy, and to which neither side is willing to commit more than a respectable fraction of its military resources. This definition eliminates minor conflicts in which neither side in the cold war is interested. It also eliminates objectives such as "unconditional surrender" and all similar appurtenances of "victory" in the traditional sense. In addition, by stipulating that the major nuclear powers are only fractionally involved, it recognizes the existence of another commitment—the forces necessary to maintain the nuclear state.

Differences in conflicts

Now what is it that epitomizes these limited wars and war-producing conflicts? I think it is that they are conflicts that can properly be described as primarily political rather than primarily military.

The difference is one of immediacy to the issue of national survival. Every time the state exerts its power (and this includes influence and persuasion as well as force) there is some question of national interest, and national interest always bears some relation to the issue of national survival. But the relation may be immediate or more or less remote. In general war, regardless how it starts, the question of survival automatically becomes an immediate issue. Even after it becomes clear that there is little or no chance of losing, and consequently no further threat to survival, the pattern of conflict has been set and the war is still fought as though survival were at stake.

We fought two world wars to eliminate threats to our survival. Despite the disagreement and confusion that marked our entry into World War I, the one compelling reason was the argument that if the Kaiser conquered Europe we should be next. Likewise, in World War II, it was because Nazi conquest of Europe and Japanese conquest of Asia would confront us with continental enemies on both sides that our entry into the war was probably a foregone conclusion, even if the Japanese had not attacked us and the Germans had not declared war on us.

The arm of the state that is peculiarly charged with its security, its protection against threats to its survival, is the military. Consequently, despite all the political and other considerations that enter into and influence our participation in a general war, once we are in it the military consideration becomes dominant. This is not to say that the military, as individuals or as a group, take over; our best militarists in time of war have been civilians. What it does mean is that the transcendent and preclusive value "military necessity" becomes the standard by which all our actions and objectives are measured. And, in the main, this is quite properly so, because in general war survival is the issue and military considerations must predominate.

Objectives of limited war

Limited war is limited because the objectives are limited. But if the objectives are limited, survival is not an issue and military considerations are not paramount. Limited crises, then, and the limited wars that arise out of them, can best be regarded as points of extra or excessive tension along the line that marks the progress of the state towards its perhaps dimly perceived ultimate objectives by political means. When a crisis arises, when a conflict of this nature occurs, if the progress is to continue, political considerations must remain paramount, else all will be swallowed up in an unintended struggle for survival.

I am necessarily oversimplifying. National power, in the broad sense that measures the state's ability to have its way in the world, is immensely more complicated. For one thing, it is a compound of force and persuasion; even with regard to those objectives that are obtained by the consent of other nations the element of force is never wholly absent. It may be that our friendship and favor are sought because the force we dispose of makes it possible for us to be unpleasant; it may be that they are sought because our force serves to counter hostile force from other quarters. The generality of ends and actions that I am calling "political" does not *exclude* force. Far from it. The distinction between "political" and "military" is not black and white. It is a matter of emphasis.

Despite these qualifications, however, the distinction is both substantial and inescapable. It has, in fact, often been the root of controversy in the past. Even in total war political considerations have had relevance, and sometimes actions that might have contributed to the defeat of the enemy have not been taken because of their anticipated undesirable consequences after the war. Likewise, in limited war, it would be absurd to say that primarily, or even purely, military considerations have no application. The distinction emerges in sharp relief when a wartime policy can be criticized *both* on political and on military grounds, like "unconditional surrender" in World War II.

Political and military values

By "military" we mean a standard of national conduct that is perfectly familiar, though difficult to define. It is reflected in statements of the purpose of armed conflict, such as: "The objective of US Armed Forces in combat with the enemy is to defeat his armed forces and destroy his will to fight at minimum cost in American lives." You will recall that one of our great commanders in World War II said that, on military grounds alone, beating the Russians to Berlin was not worth the life of one American soldier. You will recall also the advocacy of "hot pursuit" and the complaints about the "privileged sanctuary" of Communist fighter planes in the Korean war. These were all expressions of military purpose, which, it can be argued, were at odds with political purpose. In World War II, by and large, the military purpose prevailed; in the Korean war, by and large, the political purpose prevailed.

It is my contention here that in limited war the broader political purpose must predominate, must not give way to "military necessity," and must not become subordinate to the military objective of "victory" over the visible enemy. If this is not the case the chances are very slim indeed that the war will be limited. Moreover, only broad political purpose can define the limits to the conflict, both in geographical and in operational terms, that best accord with our real interest, out of the alternative limitations that might be agreed to tacitly by the enemy. Finally, only such broad purpose can tell us what we may count as a "win" when we have eliminated the traditional military objective of "victory."

It should be remarked, however, that this proposition applies only to the nuclear powers that have vast resources that are withheld so long as the conflict remains limited. If they did not have the power to convert the conflict into total war there would be less sense in the proposition because some at least of their conflicts would be limited by capability.

Limited wars between major powers

The capability of converting a limited conflict into total war is peculiarly the product of nuclear plenty. But it is not exclusively the product of that circumstance. Limited wars have been fought before between major powers—the Crimean War between Britain, France, and Turkey on the one side and Russia on the other is an example; our own war with Spain is perhaps another.

To say that it is characteristic of limited war that broad political considerations predominate is not, of course, to say that limited wars must be fought by men in striped pants. Just as in total war our best militarists have been civilians, so some of our best political strategists are men who wear the uniform of the services. The point is not *who* will fight the action; the point concerns the principles and objectives that will govern the conduct of the action. It is not that the field commander will take orders from the political advisor, but that the field commander and the political advisor will both be thinking in terms of limited objectives and in terms of predictable long-range effects.

This is a complex problem but an unavoidable one. We do have the cold war, in which the moves are primarily political, though they involve measures of an economic or psychological nature, and though some of the pawns are military. The Communist world is driven by innate forces to expand; we are compelled to resist. Success or failure, on both sides, is cumulative. The success the Red Chinese were able to claim in Korea, for example, was an immense assist to the Communist cause throughout the Eastern Hemisphere. "If Vietnam falls," someone said, "Thailand, Malaya, and Burma will fall too, like a house of cards." Likewise in Europe and the Middle East, Soviet penetration of Egypt's affairs has changed the face of things around the eastern end of the Mediterranean. On the other side, the defection of Hungary and the partial defection of Poland were mighty blows to Soviet prestige.

Irritation for political advantage

Properly considered, then, limited wars are but episodes of increased tension and irritation in this ceaseless striving to retain a political position and to gain political advantage. They arise out of moves made for political reasons, they are aimed at objectives that are meaningful only in terms of political advantage, and must be fought, if fought at all, with a weather eye to the political consequences. In each such case, in present circumstances, the adjective "political" relates to the general and long-range balance of prestige, influence, and security in the cold war.

Great, general wars, the wars of survival to which we are accustomed and attuned by our own civil war and by two world wars, are epochal in nature. They change the course of history by determining which of rival powers and coalitions will have a chance to dominate the next period. It seems increasingly unlikely that such a war will again occur except by misadventure. It seems most unlikely that any great power can be so confident of winning a general nuclear war that it will deliberately choose to initiate a new historical epoch. But this circumstance does not alter the competitive spirit of mankind, nor satisfy its unrealized ambitions and aspirations. Power and will to power are not diminished. Instead, the day-to-day processes of expression and competition achieve new emphasis.

The demands upon our ingenuity to find ways of achieving our ends in this context are extraordinary. Recently we were engaged in a great debate on foreign aid. All the best arguments for foreign aid, whether military aid or economic aid or technical assistance, relate to the fact that aid in these forms contributes to the success of our efforts in the international competition in which we are entangled. The means we employ in this competition are primarily peaceful, but so—we must admit—are those employed by our opponents in the cold war. Yet the contest is bitter and the stakes high.

Peaks of tension

Already on a number of occasions there have been peaks of tension, and some of these have erupted into hostilities. If we turn our back on these eruptions, if we do not use our power at least to protect our position, regardless of our success in those phases of the contest that are peaceful, we stand to lose out in the end. And as we approached that end, by a process of piecemeal erosion, eventually a time would come when our survival would be in jeopardy, because all our force and influence would have been dissipated save only the ability to bring our world down in ruins. But there is another peril against which we must be fortified. It is at these same high points of tension, on which we cannot afford to turn our backs, that the inhibitions born of nuclear plenty may prove unbearable. If in our impatience we lose sight of the essentially political nature of the conflict, if we allow "military necessity" to motivate our actions, and if we lift the limits of the conflict in order to achieve the satisfaction of "victory," we can, indeed, end the contest, but only at the cost of eliminating the contestants—ourselves included.

We cannot win the cold war by military means alone. We cannot be confident of our ability to destroy International Communism as we destroyed National Socialism, because International Communism is armed with weapons that would very likely destroy us too. We cannot liquidate the cold war; we must live with it and fight it on terms that make sense.

While I hope that what I have written makes it clear that we inhabit today an entirely new strategic environment which demands a revolution in our strategic thinking, I should agree that more questions have been raised than have been answered. Before concluding I shall attempt to answer at least a few of them.

A "win" in limited war

The first question is "What constitutes winning in limited war?"

Simply stated, a "win" is a gain in the cold war balance of advantage. In this sense the Communists *won* both in Korea and in Indochina. In the former they gained no territorial advantage, but by fighting the great power of the West to a standstill they gained tremendous prestige. In the latter case they even more clearly defeated a Western power, and did add a satellite to the Communist orbit. Oddly enough, both Korea and Indochina can also be counted as "wins" for the West, as they have been, because in the circumstances, given the political and military advantages with which the Communists started, the outcomes could have been much more unfavorable. This is, of course, typical of any evaluation of political "ad-

vantage." Even a provisional resolution of any limited conflict requires an element of agreement, of consent by both parties. And it is quite normal for both sides to claim the advantage. It only subsequently appears, often after many additional moves, whether one side really suffered a substantial loss.

This is a reason for arguing that in limited crises the outcome must almost always resemble a stalemate. It is also a reason why these outcomes are emotionally so unsatisfactory to people whose strategic notions have been nourished in general war. There is something satisfying about crushing the enemy, occupying his capital, and guiding his recovery—despite the sour reactions that result when we learn that, even so, things do not entirely go our way. In contrast, it is downright frustrating to have to accept a settlement in which the enemy can claim that he has "won."

From this I believe we can draw three important morals. First, that the prior moves, before the conflict results in hostilities, are even more significant than the war that may follow. Second, the side that is physically in position enjoys a tremendous advantage. Third, we must not be timid.

The reason for "cold war"

Since both sides will certainly endeavor to avoid the risks inherent in any armed conflict these days, both will seek to gain the desired advantage by "peaceful" means. This is why we have a cold war—it is what both sides are doing, with weapons drawn from their political, economic, propaganda, and military arsenals. It is only if one side or the other "miscalculates," or if the aggressor expects to gain significant advantage, that hostilities will occur. And certainly the aggressor will try to prepare the way so that his chances in combat will be good. Likewise, it is our appointed role, taking advantage of his reluctance to enter into even limited hostilities, to discourage him by assuming defensive, or, if you like, "deterrent" postures that will plainly show him the difficulty he faces in achieving his objectives with an effort prudently limited.

As has always been the case in limited conflict, if we have not made appropriate preparations we can lose before the first shot is fired. The situation in old style general war was different, because, if you had the military power, you could wait until the aggressor had pushed you too far and then recoup all your earlier losses by liquidating him.

This brings us to the second moral. The aggressor must either try to worm his way into position, and into possession, as he will do when the prospect is for guerrilla action or civil war, or, if his "peaceful" efforts fail and he decides to resort to force, he will try to complete his military moves rapidly and present the world with a *fait accompli*. There is nothing new about this except for the ever-present increased risk of general nuclear war. It is this increased risk, which makes for reluctance to take up arms, that puts a tremendous premium on being in position. This is the legitimate purpose of our troops in Western Europe and of our Seventh Fleet in the far Pacific.

But as the aggressor cannot, in general, be denied the initiative, it is necessary for us, when we are not in position, to be able to react rapidly, with sufficient appropriate force to counter the aggressor's initiative. It is because this requirement for rapid reaction is widely recognized that the mobile response potential of our nuclear air power

has been emphasized. It is because that particular type of response does not always appear to be appropriate that the need for combat ready, mobile ground forces has been emphasized.

The third observation that I have referred to as a "moral" is a commonsense qualification. Both in the preparatory phases and in the armed showdown, if we are timid we are licked. We must always remember that the risk of general war is at least as mortal to the aggressor as to us.

Korean war limitations

At this point I could go into a long discussion of the tacit limitations of the Korean war. Our acquiescence in some of them has been bitterly criticized, even by people who are thinking constructively about the problems of limited war. I think, myself, that most of these criticisms are wrong, particularly those that relate to the form of the contest and the limitation of its geographical scope to Korean territory. The "privileged sanctuary" of Communist fighter planes beyond the Yalu, for example, was matched by the equally privileged sanctuary of our bombers on Okinawa and elsewhere, even of our fighters on Korean airfields. The security of the Communist Manchurian base was matched by the security of our ports and shipping. It seems to me that the irreducible condition of limitation in this case was that the war should *not* become a Red Chinese-American or Red Chinese-United Nations War. It is clear, I think, that the Russians and Chinese connived with us to insure against this. But within the limits laid down we probably made mistakes, one of which was to relieve pressure on the Communist armies when they offered to negotiate a cease fire. The military problem of limited war is to achieve as soon as possible a tacit agreement on the limitation of its scope and then to seize boldly upon the military opportunities that are offered within that limit. It is not surprising if, in this first experiment with limited war in the nuclear age, our performance was somewhat less than satisfactory on both counts. We did observe the irreducible limit, but we made the mistake of leaving the other side in doubt regarding the limit we should observe within Korea itself, and when this resulted in the Chinese intervention, perhaps we did become overcautious and fail to press our military advantages home.

"In places of our choosing"

On the point of timidity or caution, it should also be said that we do not have to accept the other side's *minimum* offer regarding the scope of the conflict. This is what is valid in saying that we shall react "in places of our choosing." Obviously each side will seek the limitation in scope that is most favorable to it. We do not have to confine our reaction to the geography where the aggressor prefers to fight. But, at the same time, we cannot expect to choose freely the ground that is most favorable to us. Again there must be an accommodation, though a tacit one. And this again emphasizes the importance of what goes before, because one of the aggressor's intentions will certainly be to set the conflict up so that it will be fought on ground of *his* choosing. To insist that we will not go along may indeed be a way of deterring him, but only if the scope we project is within reason. If the best we can do is to hint that we shall drop H-bombs on Moscow or Peiping to defend Baghdad or Bangkok, it is rather

unlikely that our "deterrent" will pass the test of credibility.

In summary, to "win" in limited war is rather like conducting a successful negotiation with another state. We must derive our satisfaction from the long-range benefit to our interests, and not be too disappointed if the enemy can claim, with some color of justification, that *he* was the winner. Given such an expected outcome, the significance of the preparatory moves on both sides is notably increased, and if we are outmaneuvered during this phase the best possible remedy is to be able to move rapidly but appropriately during the combat phase. Finally, in all phases, overcaution is as misguided as irresponsible temerity would be.

This, then, is what it means to "win" in limited war. At the risk of repetition, it does not mean "victory" in the sense of destroying the enemy, or gaining control of him so that his future can be dictated. This is what he cannot be expected to permit if he can help it, and with nuclear weapons in plentiful supply, he obviously *can* help it.

Nuclear weapons in limited war

The second question has already been touched upon in this discussion. It is: "What is the appointed role of nuclear weapons in limited war?"

One possible answer, I believe, will stand almost without challenge. If the existence of two-sided capability of launching a general thermonuclear attack deters that kind of war, as it does, there is a good likelihood that the possession of nuclear weapons by both sides can be used to deter their use in limited conflicts. The reason is that general nuclear war is implicit in the employment of nuclear weapons. Their non-employment is the most obvious of all possible limits. The distinction between nuclear and non-nuclear war is one that everyone can understand. It is a distinction, furthermore, that is proof against inadvertent violation and possibly fatal misunderstanding. It is sharp, clean, and convincing. I suggest the possibility that the appointed role of nuclear weapons in limited war is to keep nuclear weapons from being used.

It has been said that nuclear weapons *will* be used because even if a conflict starts conventionally, neither side will go down in defeat with unused nuclear power in its arsenal. The critical word here is "defeat." Ignoring for the moment the question *whether* nuclear war *can* be limited, assuming, in fact, that it *can* be limited, the proposition—as stated—simply denies the possibility of limited war and consequently is a historical absurdity. For if nations will not admit defeat without using nuclear weapons, they also will not admit defeat *while* using nuclear weapons, and the same argument that denies the possibility of limiting war by eliminating the use of nuclear weapons also denies the possibility of limiting nuclear war itself. If neither side will accept anything less than "victory," if neither side will admit even limited "defeat"—even though the latter may be glossed over by claiming political gains, as I mentioned earlier—there cannot be limited war between nuclear powers.

A war to the finish

The proposition that in general war neither side would accept defeat without using its nuclear weapons is true but trivial. No one supposes that an unlimited, general, or total war between the nuclear powers could be anything but a nuclear war to the finish. But the point of limited war is that it is not a war to the finish, and surely it must

be obvious that in limited war the winner would be committing a crime against himself if he were to press the loser so far as to convert the limited engagement into total war. This is the loser's ultimate safeguard. So long as he retains his capacity to destroy the winner in total war he need not fear for his survival in limited war. The limits must be drawn so as to protect this capacity and thus eliminate the issue of survival from the conflict entirely. Henry Kissinger has suggested one way that this may be done: the reserves for general war, on both sides, must not be committed in limited war. They must not be used and they must not be attacked.

Some persons in positions of great responsibility in our government are on record as saying that, leaving aside "brush-fires," we cannot afford to become involved in a limited war in which we cannot use our "best weapons." Before we decide what we can or cannot "afford" we must consider whether nuclear weapons are appropriate in limited war, even if their employment can be limited.

Are these weapons of mass destruction compatible with the political objectives of limited conflict? For a time there was a lot of talk about the manpower we could save, or about the ease with which we could balance the "massive manpower of the Communist world," by augmenting our firepower with nuclear weapons. But the reluctance of our European allies to be "defended" by means of a nuclear holocaust, even a "tactical" holocaust, has begun to inspire second thoughts on this subject. Moreover, the recent experience of the Middle East crisis has made a lot of people think about what is and what is not appropriate in such cases.

"Continuation of politics by other means"

Limited wars are quite likely to occur in real situations, where there are real people whose interests and preferences have to be considered. Some of these conflicts may be guerrilla actions, perhaps most will be civil conflicts, or they may be wars between sovereign states. All will be, both for the Communists and for ourselves, "the continuation of politics by other means," which is just what general nuclear war is not. The actions we take during hostilities must not be allowed to defeat our ultimate purposes. You do not persuade people to choose democracy rather than Communist dictatorship by dropping atomic bombs on them. You probably would not choose to hold one corner of the Middle or Far East at the cost of alienating all the rest. If you survey the trouble-spots in which hostilities may occur, you will become convinced that our "best weapons" are appropriate in few of them.

My third question concerns the scope of limited war: "What size limited wars should we be prepared for?"

As I have already suggested, the possibilities run the gamut from guerrilla operations to full-blown, though still limited, wars between states. The in-between cases are not difficult. Let's look at three of the extremes.

The role of guerrilla conflicts in the cold war has been widely discussed, often with the conclusion that it is not a problem for the armed forces of this nation. Too often the argument is negative, proceeding from the proposition that our forces cannot be prepared for everything, must be prepared for something else; therefore, guerrilla warfare being a low priority, we must hold ourselves aloof from it. Even when legitimate interest is conceded the emphasis is too much on fighting guerrillas, on counter-guerrilla

action. We need a lot of new thinking on this subject. We are unfortunately handicapped by the unfavorable connotations, mostly moral, of such terms as "guerrilla war" and "irregular" or "unconventional" operations. Perhaps this is another heritage of the War Between the States.

Guerrilla warfare and popular support

The fact is that the experiences of Korea, the Philippines, and Malaya demonstrate that guerrilla actions prosper only when they enjoy substantial local popular support. Guerrilla warfare then, is preeminently political. Guerrilla warfare is possible only if the political regime within a country is so unstable or so disliked as to have alienated a large part of the population. Therefore, in combating guerrilla actions, our aim should be primarily at the population, and only secondarily at the guerrillas. This the late Magsaysay brilliantly demonstrated in the Philippines. But there is another great unexplored possibility. It not uncommonly happens that the population is favorable to us and hostile to Communist overlords. We should think, then, of guerrilla operations as a positive device, probably the least risky, though perhaps the most uncongenial to our temper, of all the ways of conducting limited war.

Limited war with the USSR?

At the other extreme, it is sometimes stated with authority that limited war between the US and the USSR is impossible. As the Secretary of Defense said last summer, "I do not think there is going to be any little war with the Russians. I think if the Russians and the Americans are ever in war in any small place, it is going to expand very rapidly into a terrible war." Possibly so; this is just about the last ditch for both sides. And just for that reason it is a rather unlikely contingency. The Russians have demonstrated a facility for camouflaging their participation in eruptions and limited conflicts and I suggest that we think of doing the same. But though the risks in such a conflict are very high indeed, it need not follow that they are risks we cannot run under any circumstances. If we allow that to become the case we shall encourage the Russians to participate openly; we shall encourage their initiative in the most flagrant cases of aggression. I think we should let it be known that we have explored the implications of war limitation; that we are convinced that war can be limited; and that if necessary to the defense of our position we will fight such wars against any and all comers.

There is entirely too much talk these days about what is going to happen, and much too little about what we are going to let happen. We cannot permit nuclear weapons to paralyze our intellect and will. We must seek to understand what is possible, and then work at controlling events. The craven attitude that all is predestined leads to fatalism or to an equally fatuous optimism. One view is that nuclear weapons are going to be used—without limit—solely because they exist, and that we might as well be prepared to sell our existence dear. Another view argues that nuclear weapons will be used because they exist but that their employment will somehow be automatically limited because unlimited employment would be unthinkable. Still another holds the unbelievable view that wars will just not happen, because nuclear weapons have made the prospect too horrible. Obviously none of these is a neces-

sary or intelligent response of the human spirit to the greatest challenge it has ever faced.

It has been said that we shall never again become involved in a war as big as the Korean war without using our "best weapons." Presumably this means that whatever limitation we accept on such a war must include the use of nuclear weapons. If it appears that the use of nuclear weapons can and will be limited and if their employment is appropriate to the immediate circumstance, the assertion is not incompatible with the requirements of limitation. But if it means that we shall never again fight another war as big as the Korean war without going into it to win a MacArthurian "victory," I must disagree. Compared to what general war in the age of nuclear plenty promises to cost, the Korean war was dirt cheap, in lives and treasure. It is insane to take our chances of survival under a rain of thermonuclear bombs and missile warheads rather than expend the effort necessary to achieve a limited settlement in any war, no matter how big.

How often limited war?

As a final question I ask: "What frequency of limited war do we need to prepare for?"

I don't have the answer, but if I have given the impression that I think there will be a limited war of one kind or another annually from here on out and that we shall be in most of them, it was not my intention. I feel that the risk of general war in any war, no matter how limited, should make war itself less frequent. Nor must we participate every time there is an exchange of small-arms fire.

It remains that limited war is a real problem, the requirements of which are exacting and still unfamiliar. To meet them we need to be prepared, emotionally, philosophically, politically, and militarily. I think it is reasonable to assume that the better prepared we are the less likely we are to be called on.

OUR defense problem in the age of nuclear plenty is twofold. We must maintain our strategic-nuclear power—enough of it so that any prospective enemy must believe that he cannot survive a war in which we unleash it. But equally, we must be prepared to exert our force in limited conflicts. The two requirements are parallel. In any true sense neither has a higher priority than the other. We must have both. We face destruction if we let ourselves become incapable of an annihilating stroke. But we can just as surely be destroyed piece by piece if we cannot handle the little threats. It might take longer, but probably not much. We should not long sit idle while our foundations were chiseled away.

Advances in transportation and communication have made a smaller world, into which the tremendous destructiveness of nuclear weapons must be crowded. Someone has suggested that the US and the USSR are like two deadly enemies locked in a small room, each armed with a hand grenade. The problem we have been exploring suggests that the analogy should be refined. Our enemy also has a knife; if we do not provide ourselves with a weapon to parry his knife strokes we can be cut to ribbons, with no defense that is not also suicide. If we do provide ourselves with such a weapon, and use it well, not only shall we have a defense against indignity and eventual disaster, but also we may yet find a way out of the room.



LEAVE THE TROOPS ALONE

COLONEL EBEN F. SWIFT

There's not time enough for everything

COLONEL A. S. Collins hit the cartridge right on the percussion cap in "What Are We Doing to Our Commanders" in the January 1957 issue of *ARMY*. As a confirmed troop soldier who will accept command any time I get a chance, I want to add a few tremors to the ground swell. My thesis is that we ought to start doing more for our commanders and less to them.

When you serve on the higher staffs you realize that problems up there are not so simple either. The tide of directives, missions, orders and objectives that moves in and swamps today's commander promises to be with us for some years to come, unless something is done.

To properly analyze the problem I believe we should start a short time before 1940. The Army then was small; it was well grounded in the fundamentals of soldiering. It knew its weapons—what there were of them—and it could shoot, march and maneuver. There may be some difference of opinion as to the relative state of morale of the Old Army as compared to the present one, but certainly the reenlistment rate of the Old Army was higher, as was the morale of company, battalion and regimental commanders.

Effects of World War II

However, came World War II and the situation changed. New equipment, new weapons poured in; the training pace was stepped up. In addition to learning the functioning and use of new weapons and equipment, commanders were required to handle larger bodies of troops, to coordinate complicated staff operations, and to master the techniques of modern, mobile warfare. Many found their previous experience had not qualified them

for these tasks. Many who could not adapt fell by the wayside, as evidenced by the wholesale relief of commanders in the large-scale maneuvers of 1941 and 1942 in the United States and in combat itself overseas.

After World War II with its violent demobilization, came Korea, which further complicated the issue. So the situation today is this:

Higher commanders and their staffs have become adjusted to the demands of modern warfare. They now work sixteen hours a day preparing training directives, operations plans, personnel accounting procedures, logistical programs, army, corps and division maneuvers. Commanders have learned the value of energetic command supervision and have encouraged their staff officers to make frequent staff visits. These visits are facilitated by the utilization of helicopters and light aircraft, enabling commanders and staff officers to visit more units more often. The many skills and techniques required by a modern Army are taught in its school system which is recognized as one of the best military school systems in the world. The Army is testing new organizations, new weapons, new administrative methods. It carries on a basic education program, an athletics program, an information program, a career guidance program, a food service program—all supervised and inspected by experts. Certainly all this is desirable. It should be obvious to our lower-unit commanders that it is necessary for an efficient army. What is missing in this picture? What is the effect on the commander?

Not enough Indians

What is missing is the troops. Commanders and staffs sufficient to command an army of a hundred divisions are now commanding nineteen. When the higher commanders and staff work forty-four hours a week, the troops work eighty-eight. This is inevitable when there are too few troops to implement the orders of so many higher headquarters. An army staff may spend three months planning a three-day maneuver and wonder why the troops are overburdened, forgetting that those same troops have also had to participate in corps, division, regimental, battalion, company and platoon maneuvers or problems. I have been in outfits which had two or three *army* maneuvers a year. Also, when another corps, division or regiment

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has a maneuver or a problem, where do the umpires and control personnel come from? From the neighboring corps, divisions, regiments, of course. One army commander stated as his policy that the units of his army should spend one-third of their time in the field. By the time all the little extras, like travel to and from the field, the umpire details, the alerts, and so on, were added, it took at least two-thirds of the time for most soldiers within the units, particularly the commanders of the lower units—platoons, companies, battalions. Most soldiers do not object to being in the field; as a rule they are happier there, but if there is too much field duty, where is the time for maintenance, for administration, for ceremonies, for inspections and marksmanship, coming from?

Most units welcome visits from their superior commanders and naturally want to make a favorable impression upon them and upon visiting staff officers. However, these visits can get out of control when senior officers descend, individually and collectively, on subordinate units busy doing something else and without facilities for taking care of large numbers of visitors. Usually the visitors have the best of intentions to "help" the unit commanders, but frequently the best help would be to stay away and not distract them from their primary mission.

Too much school

No one can deny the benefits of the Army's school system, but it can have harmful effects too. General Taylor once expressed his amazement and gratification at being able to find in the Army, if he had to, a violin player who could play shortstop. The school system has probably done as much to develop such diverse skills as any single activity, but where do the students come from? Again, they come from quotas levied on the troop units. Commanders often don't send the soldiers they think best qualified to the schools, or even those who want to go to school. They send those who can be spared and hope no one finds out that the person selected does not have the prescribed prerequisites. This seems a bit reprehensible until you remember that 365-days-a-year training program the commander has to comply with. With half of a command, mostly key specialists, away at school, the violinist who plays shortstop has to cover second base and play the piccolo, too. Is it any wonder that he would rather play for the Dodgers or for the Philadelphia symphony? This is what is happening to many of our specialists today. Who takes it on the chin for this? The commander.

Too much of everything

It is obvious that in testing new organizations, tactics and techniques, troops will be needed, but seldom are there troops designated for this purpose. In all exercises, experiments and tests, regular TOE units carry the load—in addition to their other duties. This, of course, is excellent training, but an excellent training program has already been planned for them, and usually the troops must try to do both.

There is no doubt that it is desirable to have a well-educated, well-oriented Army, that knows what its purpose is, and what each individual is fighting for, but the program takes time to prepare, usually the commander's time, and the time of the troops is taken from training. The same is true of the athletics program, the recreation program, the character guidance program, the supply economy

program, the food service program, *ad infinitum*. We have experts in all these fields, all enthusiastic, as they should be, and all vigorously pushing their own activity, fighting for the troops' time, and last, but not least, inspecting the units to see that commanders are giving their attention to their particular project. They add their demands to the demands of inspectors of personnel administration, security, training, supply and maintenance (by each technical service). All these experts can tell the commander just how to improve conditions in the field in which he is expert, but they can't tell the commander just where he is going to find the time and the people to do it.

Around and around in a paper cage

What effect does all this have upon the administrative load? Each staff section, each project officer, each inspector, must report on all these activities. To make out the report, he must obtain information from the units. Consequently, forms, questionnaires, records, statistical data, confront our old friend, the unit commander. This is in addition to his own disciplinary and court-martial administration, mess accounts, supply records, the various certificates he must sign attesting that he has personally inspected such-and-such and found so-and-so to exist, and finally, the dreaded "reply by indorsement hereon." All this is sufficiently time-consuming, if done properly, to prevent the commander from devoting enough time to his other command responsibilities.

The commanders are in a squirrel cage. They cannot concentrate on a few well-chosen objectives, because if they do they will find someone snapping at their heels to do something else. Our people don't shoot as well as they used to because they have too many weapons to fire, and not enough time to do it in. But the pressure is still on to keep marksmanship records high. Hence the caliber .30 pencil. If a battalion commander wants to prepare for a battalion test he does it at night or on weekends, because his duty hours are all planned for him by some higher staff. If he does this, he may get a higher rating on the battalion test, but he will get letters inquiring as to the sorry state of his motor-vehicle maintenance or his supply economy. His married noncommissioned officers tire of getting home about once every three weeks. And who can blame their wives for berating them for neglecting their home?

When higher headquarters finds that someone's pet project is being slighted, a letter is prepared to the commander asking why, and to avoid such occurrences in the future a certificate is prepared for the commander to personally certify that he has personally seen to it that the thing has, by golly, been personally done. (This is decentralization?) Also, it involves more paperwork, possibly a court-martial or at least disciplinary action, or in any case another flood of paper from the commander to someone and return. Is it any wonder that at the end of about nine months of this our commanders are anxiously awaiting orders to get them out of the rat race?

Leave the troops alone

That is the situation; possibly exaggerated, but not too much. What are we going to do about it? I have a few recommendations, but they all come under one broad heading, and that is simply: *leave the troops alone!* Give them time to breathe, to work out their own destiny under their

own commanders. Let them employ that old principle, the concentration of force, on a few well-chosen, attainable objectives. This is what I am convinced must be done for our commanders, and it is easy to say. Now, how can it be done?

First, to avoid too many demands upon the lower echelons of higher headquarters, a conference should be held at the highest level to discuss an allocation of time for *all* activities of all units of the command at least once a year. At this conference make a command decision on how much time to allot each echelon of command.

For example, if the conference is held at army level, the army commander will decide how much time during the year the corps commander will have for corps activities, how much division will have, regiment, and so on. He will make certain that no commander infringes on the time of another, and he will take *all* activities into consideration. What happens at present is this: Higher headquarters puts out a training directive, allocating so much time for basic individual training, so much for platoon, company, battalion, division, and so on, with the latter part of the schedule devoted to corps or army maneuvers. The next echelon plans accordingly and makes out its schedules which are duly disseminated. This is fine, but where is the time for the army command inspection? for the review for General Blotz when he retires? for the maintenance of vehicles? the I&E program? The commander often finds he has an IG inspection smack-dab in the middle of his range season, or division organization day when he is preparing for his battalion test, or just as he starts his platoon leaders on learning how to run a decent patrol, he is alerted to move out on Exercise Hailstone. The point is that all activities and not just training should be considered in the schedule. It cannot be done piecemeal. Every higher commander is tempted every day by staff officers or experts to inject a project, an idea, a new objective for the troops. If staff officers didn't do this, they wouldn't be good staff officers. I know this happens, because as an operations staff officer on an army staff, I've sold a few ideas myself. I still say they were good ones, and worth my time and the time the troops spent on them. But the boys on that same staff in other sections had some pretty good ideas too, which also involved troop time. Not to mention our counterparts on corps and division level. That is why the decision must be made at the highest level, and by the highest commander, who may have to leave quite a few projects out, including some of his own.

A flexible training cycle

When a training directive is made out these days, the training cycle is always one year. *All* types of training must be completed in that year; hence, the 365-days-a-year training schedule. But why can't some types of training be scheduled every two years, or three? For example, air transportability and amphibious operations are important types of training, but they are not as important for infantry as rifle marksmanship, and they are time-consuming if done properly. They should therefore not be scheduled every year as should marksmanship, but possibly in alternate years. The same is true of maneuvers. For example, when corps maneuvers are scheduled one year, a corps of an army could control the maneuver, furnish the Aggressor detail and umpires, while the other corps par-

ticipates in it. The next year, they could turn about, instead of trying to do both in the same period during the same year.

Another thing that can be done is to either reduce the number of school programs, or make it mandatory that school quotas are filled from personnel not already assigned to units. A commander wants his people to come to him school-trained, but when he is required to send his key leaders and specialists to every school under the sun, he will do anything under the sun to avoid it.

Combined programs

Some of the programs the Army has can be combined. I suggest I&E, character guidance, and supply economy. This would require fewer people and less money to conduct and would absorb less time. The number of programs simply must be reduced, and the only recommendation I have is that someone in authority reduce them. If he doesn't, we will continue to have distracted commanders who cannot carry out any single program properly.

But if all these recommendations are accepted under our present Army organization, what will be the impact on the commanders and staffs in the higher echelons? How can they learn to handle large bodies of troops and perform the varied staff functions necessary in large-scale operations if they don't have the troops? One answer might be to revise the organization, so that we have fewer high commands and staff, or proportionately fewer personnel in the high command and staff business than in troop units. But what will we do with the people now on these staffs? There is hardly room for them in troop units. These are some of our most highly trained people, and we don't want to get rid of them—not all of them, anyway. Unfortunately, too, this would get us back in the old situation of only a few people being trained in high command and staff operations, whereas many will be urgently needed when the balloon goes up and the Army expands.

Staff training

A step that could be taken to alleviate this situation might be as follows: In large command post exercises in which unit headquarters down to battalion size are required to participate, instead of calling upon the troop units to provide the lower headquarters personnel, let the personnel of adjacent headquarters not participating in the CPX form provisional headquarters and act under the command of the regularly organized higher headquarters. For example, the commander of an army of three corps desires to hold an army CPX. Two of the corps headquarters participate as a whole with their entire complement performing their natural functions. However, the personnel of the third corps are broken down into provisional division, regimental and battalion staffs, with the officers and men of that headquarters acting in the various capacities of commanders, staff officers, and communications personnel in the provisional units. Such a measure would train the personnel of four headquarters—one army and three corps in high-level command and staff operations. It would absorb the time of the officers and men of these headquarters so that they could not dream up innumerable projects for the troop units. It would leave the lower units free to work on much-needed activities under their own commanders. For a time, at least, it would *leave the troops alone*.



"We kill Chinaman!" said Captain Maleaku of the Ethiopian Expeditionary Force, his fierce face alight with pleasure

"NUMBAH ONE SHOOT"

CAPTAIN ROBERT F. ENSSLIN, JR.

THE first round was a dud and splatted into the dusty Korean earth a few yards below. You fumble frantically with the crank on the field phone and it's impossible to take an even breath.

"Bone! Dammit! Answer!"

"Bone FDC."

"OP 15; fire mission!"

"Send your mission!"

"Azimuth 120; Concentration Charlie 58; active enemy recoilless rifle; fuze Victor Tare; will adjust."

The two little men on the next hill are taking their time. The one with the furry white cap has thrown in another round and the hatless one is bending his eye to the sight. Probably the same pair who put one through the aperture of OP 16, on your right—hard to think of anything but how big *your* aperture looks right now.

The black tube spits a flash, then smoke and you glimpse the blurred black speck that erupts from the smoke. Then duck! Pull your steel bucket

down over your ears and press your face against the coarse, oily sandbags. Pray. A split-second roar and then whap! To the right this time, close enough to throw dirt through the slot. A deflection bracket on the first two, with range correct!

"Look, that's me those bastards are shooting at. Hurry it up. They're too damned close!"

The two little men work faster now and pump off another. It clears your hill, landing in the valley behind. They've lost the range and bury three more in the slope below your position. They scurry down behind the hill, dragging the three-legged weapon behind them.

"Charlie Base Piece One on the way!"

"On the way, hell! Forget it! You're too damned slow."

"Whaddaya mean, slow? That mission was out in a minute and thirty seconds!"

"You're using a Chinese wrist watch. Let me speak to the S3."

"Do you cease fire?"

"Hell, yes! Cease fire; end of mission!"

"What's your surveillance, sir?"

"No effect. Good concentration, but no effect; fifteen seconds late."

"Can you give us something better than that, sir? Divarty doesn't like us to waste ammo."

"You can waste one round! Let me speak to the S3."

"Major Page here."

"Sir, Lieutenant Ensslin. The

Chinks are up to their old tricks with the recoilless. Pump off five or six, then duck. I've got concentrations on their pet spots, but it still takes too long to get the rounds out. There's one particular spot they keep coming back to. Could you lay a platoon on it and have the crews stand down?"

"We'll put Charlie's left platoon on that, rather than on their normal barrage. Do you have a good concentration?"

"Yes, sir; how do you want me to request it?"

"Call for Flash 57 and we'll shoot it. How's it going up there today?"

"Too busy to suit me, sir. They've been active with mortars and recoilless all morning—seem to be registering on our position. I imagine that means trouble for I've found that Joe doesn't like to waste ammo. I'd appreciate it if you'd alert the batteries and make sure they're set."

"We'll do that. Let us know when your friend with the 57 comes back."

"Right, sir. Thank you."

YOU know with a dull, numbing certainty that the Chinese will be on your position tonight. Last night they crawled up to within a few yards and moaned, whistled, and yelped. Despite Captain Maleaku's orders, a few of the more trigger-happy Ethiopians opened up, and now Joe knows at least some of your automatic-weapons positions.

Thank God you're with the Ethiopians. You know they won't bug out and leave you. A company commanded

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by a man like Bekele Maleaku would rather die than retreat.

You twist the crank on the hot-loop phone and try to raise the OP on your left. The circuit rings dead. There's no fixing your lines now. Your jeep driver, recon man and lineman are all down in the battery for pay call. You won't make that mistake again. This hole gets awful lonesome when those rounds start whining over. You still have your FDC line through Captain Raigoza, your liaison officer, and you've just made a radio check.

You take a look at the hills. In Korea the hills get taller the farther north you go. The Chinese are always to the north and consequently always seem to own a higher hill. You're perched on Hill 375 and the Chinese have an outpost to your right front on 400 at a range of about 600 yards. Hill 419 is dead ahead, about 800 yards. Looming up farther to the right, Hill 1062, mighty Papa-san, dominates the terrain, enabling Communist eyes to follow you for a mile when you approach this outpost position. Coming out to the OP, you have to duck around the hill hiding battalion head-

quarters and really open it up. Your driver, Elliott, needs no encouragement. You hang on for dear life as he flies on out to the meager shelter of 375. Papa-san makes it pretty rough.

It's getting later now and your crew hasn't returned. You curse because you really need help at night. You'll bust them, by damn, and tell the BC to send you another crew.

The 57 has pecked away some more, but not from the right spot. The incoming seems to be stepping up as the dusk deepens.

"There they are!"

The two little men are dragging their black killer into position again. The position! You're on the phone already and your ring is promptly answered.

"Bone FDC."

"This is OP 15. Fire Flash 57!"

"Say again."

"Fire Flash 57, dammit; it's set up!"

"Yes, sir."

The two little men have switched positions. This time Furry Cap aims and squeezes one off. It whistles over

harmlessly. The hatless one is wiping off the next round with a piece of brown rag. He doesn't seem at all rushed.

"Charlie Platoon, two on the way."

He rams it into the breech and puts his fingers into his ears. Furry Cap is lining you up as your rounds whistle in and burst into two black clouds. Perfect height of burst and a bracket fore and aft. The effect on the ground raises a cloud of dust around the pair as the next rounds arrive.

As the dust clears the black tube can be seen, pointing skyward. Only one Chinese is visible. He lies beside the firing pit, rolling from side to side, his hands holding his belly. A figure pops up on the skyline, hops gingerly over the squirming form and grabs the 57. He pulls the piece down below the skyline.

"Repeat range; repeat fire for effect."

The wounded man is painfully dragging himself away from the pit and finally drops from sight into a commo trench. Four more rounds blast the vacant landscape.

Now comes a really deafening whistle-scream—cra-a-wham! The concussion throws you to the ground and your brains feel as if they've broken loose



"Cease fire; end of mission. Weapon silenced; one KIA, one WIA. Beautiful job; save that concentration."

"That's concentration Charlie 64, sir."

"Roger; thanks."

MALEAKU comes charging into the observation bunker, his coal-black skin glistening with perspiration. His white teeth show in the perpetual grin that gains an exultant fierceness when a battle is in prospect. He pounds you enthusiastically on the back.

"Good! Good job. Numbah one shoot! We kill Chinaman!"

His entourage, the exec and two

with our bayonets and kill the Chinaman. They cannot go back or front. It is good, no?"

"I'll wait for your order on the defensive fires. The batteries have been alerted. Just don't wait too long."

"Do not worry, Leftenant. We will take care of you." The cavalcade bustles out and the evening chill joins a natural one to send a tremor down your back.

The dusk is deepening and you strain to see movement on the slope of 419, down toward 400. Is it really there, or is it just your imagination? Not definite enough to shoot at, at any rate. Really starting to get dark now.



runners, pant in behind him. One carries the M1 with sniperscope and flash-hider that Maleaku likes to fire at every opportunity. His aristocratic nose is wrinkled by his grin. He throws his arm around the runner.

"This boy said you would get 57. Smart boy. My best boy. Fifteen years now, he brave soldier soon."

"I think we're in for it tonight."

"Yes, they will come tonight. From Hill 400, down that ridge there. Many Chinaman will die," smiles Maleaku.

"I've got a concentration right on the saddle of that ridge, in addition to my regular defensive fires."

"Do not shoot too soon. Let the Chinaman come close, then shoot your artillery behind him. We will go out

Could be anything out there. Still no sign of those misbegotten GIs of yours. Really quiet, too. Feel quite alone.

There's a pop and rustle, and a green flare wobbles lazily upward just below the crest of 419. Suddenly 419 is sparkling with firefly lights, as the small arms open up. The mortars start dropping in—just a slight whir, then bam! Then some flat-trajectory stuff screams in. When you hear 'em whistle, you don't think; you just duck.

In fact, it's all pretty automatic right now. You've pulled into your military shell and are operating by instinct and training. Still, you feel a momentary exhilaration, but it's only a quick emotion, sort of an animal instinct for combat.

You're on the phone, keeping Bone informed. "Intense incoming on my position; 60 and 81 mortar fire and 76s. The 76 fire seems to be coming from a flash azimuth of 360 on ridge running down from Papa-san. Did you get that, Bone?—Bone, hello Bone—" The phone rings dead and you flip on the 509, waiting for it to warm up.

Now a reddish orange flare lazies up and suddenly the enemy mortars and artillery go silent. A burp gun rips the night, right down below you and to the left. The small-arms racket grows to a deafening din and above it all you hear the screams and wild singing of the Ethiopians. The lead is singing close and you drop your head just as a handful spits through the aperture, rips into your log roof, and showers you with bark.

YOU'RE trembling now, but your voice is somehow steady as you press the mike button. No word from Maleaku, but you want some artillery out there!

"Slander 60, Slander 60, this is Slander 66; over!"

"Slander 66, this is Slander 60; over!"

"60, this is 66. Will you relay my transmission to Slander 80? Over!"

"66, this is 60. Send your message. Over!"

"This is 66, my position under attack; request continuous defensive fire on concentrations Dog Fox, Dog Easy, Fox George, and How Mike. I say again: Dog Fox, Dog Easy, Fox George, and How Mike. Over!"

You wait as your message is repeated, cursing the necessity for relay forced by the Korean hills and praying for accuracy on those close defensive fires.

". . . 80 requests information as to nature of attack. Over!"

". . . Enemy infantry attacking this position. Defensive fires urgent. Over!"

". . . 80 requests estimated strength of enemy force. Over!"

A new voice breaks in: "Slander 80, this is Slander 65. Get that goddam fire out there and cut this crap. This is 65. Out!"

It's good to have a liaison officer like Captain Raigoza backing you up. Seconds later you hear the welcome whir of your own shells ripping the air overhead and landing out in front of you with a reassuring whomp! whomp! whomp!

Through it all you can hear the

whistles blow as the Chinese group into assault waves. In the light of the flares you catch glimpses of them moving down the ridge from 400, just as Maleaku said they would. Occasionally their weird bugle calls can be heard above the din. Now another green flare and their artillery and mortar barrage resumes in full fury. The rounds are well zeroed from the afternoon registration. Every few minutes a mortar round lands on top of your bunker, peeling off another layer of sandbags and covering you with the dust and dirt that falls through the log ceiling. Perspiration breaks out on your dusty face and the sweat-slick handset slides in your fingers. The barrage ceases and another infantry wave is on top of you. In the assault they have moved even into their own support fire.

Suddenly, Maleaku, his runner and the exec burst into the bunker. Their faces are alive with a wild exultation and Maleaku's eyes literally jump with excitement.

"Are you all right?" he asks, pounding you on the back. "There are many tonight. We will kill, kill! The artillery is good—tell them give us more."

You relay the request as Maleaku pokes his M1 into the aperture and starts pumping rounds at the scurrying shadows in the smoky darkness.

"... 80 reports that you are receiving all available fire. Rate of fire will be increased. Out!"

Ten battalions of artillery working on your targets, but still the bastards keep coming. How can they get through? You can see their dead, lying on the shell-torn ridge in the flare light, but it doesn't faze the others who race through the whining steel! Guts or stupidity? Whatever it is, they've got it.

Maleaku is gone again. All you need now is for a stray frag or slug to silence the 509. It hums, then you hear Samuels from the OP on your right.

"... Slander 66, this is Slander 67. Understand your position has been penetrated. Is that affirmative? Over!"

"... 67, this is 66. Impossible to determine. Out!"

The Chinks are on your hill now, several are firing from your forward trench, below your tank emplacement.

A sudden desire to get out engulfs you. It passes, but your knees are a little wobbly as you pull your .45 and draw the hammer back to full cock. The next son of a bitch who comes

through that door will die—but fast!

There's nothing to do now but pray and sweat. Just sit there and report the confusion to Bone FDC. Keep your head down and take a quick look when you can. There's a lot of lead singing through that opening, and you try not to think about the grenade that may come rolling in.

Suddenly it ends. A star cluster fired from Hill 419 ends all but the friendly defensive concentrations, and these too die off quickly. You holster your pistol and start calling for fire on likely assembly areas. Let's keep them off balance.

Maleaku comes in again and tries to pierce the blackness with his binoculars. "Be ready. They will be back. We lose many men, but the Chinaman lose more. They get two of our BARs. Tank lieutenant wounded. Other tankers dead."

It's now 2100 hours. The assault lasted about two and a half hours. If they try again, it'll be before midnight. They need time to organize a position before daylight brings our air into play.

YOUR crew turns up, finally. You're so glad to see them it's hard to chew them for missing the flap. Raigoza held them at Ethiopian Battalion headquarters because they'd never have made it during the assault.

Your battery CO has sent your very good commo corporal, Spragin, to replace a wounded recon sergeant in another crew. Spragin's replacement, Palmer, is huddled nervously in a corner of the five-foot-square OP.

You shoot at some more possible assembly areas and routes of approach. It's easier now that your recon, Burgess, can handle the radio. Palmer is out getting in a wire to the CP and Elliott is shuffling maps for you and holding the shaded flashlight. It is now 2300.

Here they come again! Same pattern as before. All hell breaks loose on top of you and the night seems alive with screaming sound and flashing, bursting light. The batteries have been standing by and it's quick this time, like turning on a spigot.

But it doesn't stop the maniacs. Your "wall of steel" is like a strainer, stopping about half, letting half pour through. They're coming through right where those BARs used to be. Maleaku put out an LMG crew to cover the gap, but it's gone too. You see flames and white phosphorus showers to the



right. The Chinks must be tossing WP grenades into some of the bunkers.

Another flare signals for more supporting fire and you feel sure they know where you are. The 76s are landing close. Now comes a really deafening whistle-scream that cringes you into a knot—cra-a-wham! The concussion throws you to the ground and your brains feel as if they've broken loose. You try to shake out the spots and noises. A 76 round has hit the trench wall beside the doorway!

"Is anybody hurt?"

"I think I am, sir. There's something wrong with my leg."

It's Burgess. The flashlight shows that the calf of his right leg looks as if it's been through a food chopper. And you had been standing between Burgess and the doorway. Figure that one out! You find the pressure point and hold it with one hand as you send a fire mission by radio with the other.

Elliott is hastily rigging a tourniquet as Palmer crouches against the sandbag wall, silent and trembling. The assault continues as the Chinese try to expand their foothold on top of your ridge. Will this ever end? Burgess can take it, but he's feeling shock from losing so much blood. After an eternity things ease off to a tense silence. Elliott carries Burgess back to the CP for the medics just as the Chinks drop in a few more. Their fire, though, is sporadic, and it looks as if they're knocking off for the night.

"Palmer, take over the radio. I want to get back to the CP and see how Burgess is making it."

"I can't work that thing, Lieutenant."

"What!"

"I ain't never used a radio."

If you weren't so tired, you'd be furious. They sent you a communica-

tions man who can't communicate! You send him out to work on the wires and then you request permission to withdraw from the radio net, knowing beforehand that it will be denied. It means no sleep until some ground lines are in, and that will be after daylight.

It's getting cold now in the OP and you shuffle your feet and turn up your collar and pull down the earflaps of the field cap beneath your helmet. You're cold from the bones out—cold in spirit, with a tense, back-aching tiredness. You're hungry and your sinus throbs from too many cigarettes. Occasionally the rats scurry across your feet or start a shrill, squealing battle in the crevices near the roof.

Eventually daylight comes and brings with it some welcome warmth. The hard light of dawn reveals the mess your neat little office has become. The floor is covered with spent brass, dead flashlight batteries, cigarette butts, and even a couple of hand grenades that have fallen to the floor. Your map boards, communications gear and yourself are covered with Burgess's blood. You're dirty, bearded, and dead tired. Palmer finally gets you wired in and you put Elliott on the watch. You stumble back down the commo trench toward your living bunker, climbing over the spots caved in by shell fire and stepping over the body of a Chinese soldier. He has been bayoneted in the head—and the bayonet is still there.

You drop into your commo wire hammock, still fully clothed. It seems you can't have slept five minutes, though your watch says two hours. Elliott is shaking you. "Lieutenant, the Colonel is here!"

"OK, OK, tell him I'm coming."

LIEUTENANT Colonel Kimmitt is only the first of a string of distinguished visitors. The Ethiopian Battalion commander, the CO of the 32d Infantry, and even Brigadier General Daniels, the assistant division commander, come up to take your report and to survey the situation. They all agree that the Chinks want your hill and will be back tonight to get it. The tank is disabled and cannot now be replaced. Many of your automatic-weapons positions have been knocked out. Several bunkers and fighting positions were blown. Fortunately, you're too busy to spend much time in thought. You try to keep your crew that way too, for you can see they share your apprehension. The afternoon is spent

registering new concentrations, readying maps and checking communications. The men dig up new batteries for the radio and flashlights, new bulbs for your instruments, and check all wiring. Corporal Messick, an ex-FDC man, is sent up to replace Burgess.

Darkness comes again and, you assign yourself to the pre-midnight shift. You send the rest of the crew to the living bunker to get some sleep. The cold settles in and tension grips the silent atmosphere. At about 2100 the moon disappears and black night blots your vision. You strain to see the enemy platoons that you know are moving out to 400.

The entire hill explodes in an earth-shattering ten-second crescendo of thundering sound. As you pull yourself together you crank on the dead phones and turn again to the radio. You always wondered how those Chinks felt when you hit them with a TOT mission. Now you know.

You get your defensive fires started. A round is landing on each concentration every five seconds. You wonder for the hundredth time at the determination that sends the swarms of ill-clad, underfed soldiers into the raining steel. They fight too well to be doped up. Their incentive is probably an officer's pistol behind them. Their supporting fire seems angrier, more intense than the night before. You can imagine how the Chink brass reacted when last night's blood bath brought no victory. The general's pistol is probably still smoking.

Your crew bursts into the OP. How did they ever get down the trench through that murderous fire? "Jesus! I didn't think we'd ever make it," gasps Messick. Elliott slumps against the back wall, breathing hard.

"The Captain sent his runner down to get us. The kid who carries his rifle. Mortar landed right behind him just as we were leaving."

"Yeah," said Messick. "Blew him right into my arms—knocked us all back into the bunker!"

"Any of you guys get hit?"

"Naw; the kid took every fragment. Died in a couple of minutes."

"That's right," mutters Palmer respectfully. "Never said a word."

The blood-covered men are nervous with nothing to do and shaken by the ferocity of the Red barrage, so you put them to work. Messick handles the radio and Palmer tries to get through on a phone that undoubtedly has huge

sections of connecting wire blown away. Elliott holds the dimmed light on your map board. Your mouth is dry and your palms are damp.

You're all thinking about where you'll go if the position is overrun. The OP is the most forward spot on the military crest of the hill. One trench and one BAR are in front of you. The Reds need only to push in about twenty yards from the tank position they were on last night and they will be astride the commo trench that leads back from the OP. The reverse slope immediately behind you is liberally patterned with antipersonnel mines. The trench in front leads off down the hill to your left and eventually up another hill to the next OP. That's probably your best out, but try not to think of leaving. You can't leave while you still have communication with Bone.

"Sir, I think they mean to have us tonight!" Messick's conclusion is unwelcome.

"I ain't never seen 'em waste so much ammo," says Elliott, apprehensively.

"They ain't wasting it," is Palmer's doleful comment.

SUNBURSTS of white phosphorus to the right herald the return of Communist assault troops to last night's breach. Tonight it looks like more of them, and they got there faster. The enemy preparation must have taken a heavy toll of your infantry. Many of the Ethiopians think that mortars can't hurt them and their fearlessness adds greatly to their casualties. Maleaku, with only his exec, steps in just as two rounds in quick succession rock the timbers overhead. His face is a grim mask. "They are almost to the CP. No soldier has moved back. Every soldier dies in his place."

"Is your battalion going to send us help?"

"Our radio is broken. You must tell them how we are. Bring the artillery close. The Chinaman assemble this side of our shells."

You grab the handset and start to transmit. "... Bandits are close to home plate. Infantry communications negative. On an azimuth of 6400 drop all defensive fires 100. I say again: drop 100 on all defensive fires. Over!"

"... Your request plots behind the No Fire line. Who requests this fire? Over!"

"... Fire requested by infantry com-

mander . . . Request urgent . . . Over!"

They finally come through with the fire, and the shells seem to be landing in your lap. Friendly and enemy rounds merge in a deafening thunder-clap.

More WP grenades to the left bring you to the stomach-churning realization that the Commies have cut your trench route in that direction. If you choose to leave, you'll have to fight your way out. Maleaku knows it too, and you can tell he doesn't want to live to be the only Ethiopian commander to lose a position in Korea.

"Bring the fire closer. It is too far out!"

"But, Captain, your men aren't prepared for it! Those in the open will be killed!"

"We will kill more Chinaman. Bring it closer!"

You make your request, hoping they won't slip any fuze quick in with the VT.

" . . . That plots right on top of you, Lieutenant. Are you sure of your location? Over!"

" . . . Affirmative. Fire my request immediately. Out!"

It comes, and you huddle down in the bunker to wait it out. The jarring air bursts, exploding twenty yards over your head, keep you shaken and somewhat dazed. The whole hilltop is torn by jagged bits and hunks of steel. The lethal spray proves too much for the Chinese, and you move it slowly out again to allow the Ethiopians to mop up.

It is now after midnight. Too late for Joe to try again. The reaction really takes hold of you. You light your own smoke so that no one will see that your hands are shaking. Even the nicotine stimulus can't seem to stave off the overwhelming exhaustion that suddenly forces down your eyelids. You turn the OP over to Messick and stumble down the blood-slick trenches to your bunk.

In the clear, reassuring daylight you assess your position. The OP bunker is quite weakened by the pounding it received the past two nights. The trenches are half-caved-in and most of the fighting bays with overhead cover have been knocked out. The company has suffered more than seventy casualties—over half its effective strength. The forward slope of the hill is littered with dead Chinese. A count of those visible plus some quick calculating indicates the Chinese have

paid for their forays with close to two hundred dead. The odor has already begun to form and it mixes with the fear-sweat stench of your own unwashed troops.

YOU drag back to the CP for some breakfast, still tired, still aching. The food—C ration well laced with tabasco—is reviving. You express your sorrow to Maleaku about the death of his runner, the familiar shadow now missing from the Captain's side. He turns to you and laughs, the old fire returning to his eyes. "Do not be sorry! That is why we came to Korea. To die!"

"Personally, I don't plan on it."

In comes the new runner, dragging a field pack and a duffel bag. Maleaku smiles. "Here are your things, Lieutenant. We will be relieve today by the 4th Company. My men have fight

one up there who knows the terrain."

"Good God, Captain. We've had our turn! Since when don't we stay with our company?"

"Since when do you talk to me like that? Look, I know it's rough, but we've got no choice. I'll get you down for a shower as soon as I can."

"Yes, sir," you strain through your teeth as you release the switch. A dreadful frustration grips you. You think of odds running out and for a flashing second you feel you'll be dead this time tomorrow. You quickly force the panic from your mind and with great effort discipline your thoughts.

As you return to the CP, the 4th Company's troopers are filing slowly up the gruelling climb. They move onto the position and start counting ammunition and signing over sector equipment.



well. Now we rest."

A wave of relief surges through you, and you think of the steaming field shower, the cool luxury of a close shave, and clean clothes. You hustle up forward to tell your boys. This news is better than mail from home. Messick meets you at the door. "Sir, Captain Raigoza's on the line."

"This is Ensslin, Captain."

"Have you heard about our caper for today?"

"Yes, sir. We're looking forward to it."

"I want you to give Captain Belte-haile a good orientation."

"I'll stay as long as he wants me."

"You'll stay longer than that, boy! The Old Man really thinks that's going to be a hot spot, and he wants some-

Maleaku and his aides are the last to leave. You hate to say goodbye to the little fire-eater. He's taken good care of you, and you appreciate it. He pauses at the top of the steep pathway down the hill. His face is serious.

"I think the Chinaman will come again tonight. They want this hill very bad. But 4th Company is good fighters. If Communists take this hill, all Ethiopians will be dead. You are good fighter—you will die too. But have courage. If you die, do not worry. The place for heroes is better than this."

He shakes your hand firmly, earnestly. He turns and slowly leads his small party down the hill. Once he waves and flashes you that familiar grin. As you turn back toward the OP the sun drops behind the hills.



CURRENT DETERRENT

Fast-moving, hard-hitting army units are the one effective deterrent to peripheral nibbling and limited aggression. Here's how such a force could be organized

MAJOR THOMAS J. MCDONALD

WHILE we enjoyed an atomic monopoly, the Communists attacked South Korea, and would have quickly overrun the country had not U. S. air, sea, and finally ground forces intervened.

Those pared-down ground forces were the decisive element in saving twenty million South Koreans from Communist engulfment. As Soviet tanks rolled across the border it became

apparent there was no hope of saving South Korea by sea and air power alone. Ground forces were essential.

In spite of our massive strategic, tactical and logistical advantages, atomic weapons were not used, nor were they employed in a later "peripheral" war to save beleaguered Dien Bien Phu from the Vietminh hordes.

I will not attempt to discuss the complex and varied reasons why atom-

ics could not be used. The point is that they were not—even when the danger of atomic retaliation was slight.

Now that the Soviets may have sufficient nuclear weapons and delivery means to counter our strategic air-atomic force, is it still reasonable for us to rely upon the threat of strategic nuclear bombing for defense against progressive Soviet nibbling—the peripheral type of war so recently experi-

enced? Can we threaten the Kremlin courtyard with a thermonuclear blast when they can send fleets of one-way bombers across the polar ice cap to destroy our cities, or launch missiles from submarines off our coasts?

So long as their thermonuclear deterrent is as great as ours, the Communists will be able to nibble, unless appropriate counter-nibble forces stand ready.

SAC, the ICBM program, and air defense are all vital to our security. But these three tremendous activities, in spite of their importance and the vast drain they make on our technological and economic resources, do not constitute a complete deterrent, and especially so in the case of peripheral or limited wars.

What kind of forces must we have to insure swift, decisive counteraction in limited war?

What kind of forces?

If arbitrary dividing lines between Army, Navy and Air Force are ignored, it is possible to visualize something

new in fighting units that will more than meet the numerical threat of Soviet arms at any point around the Iron Curtain.

This strategic striking force must have ground fighting elements equipped with air-transportable, light, powerful tanks capable of vastly greater performance than the lumbering behemoths of World War II, armored personnel carriers, and self-propelled support weapons with improved range, accuracy and striking power. This force, with its operational air elements, can have an unfettered logistical tail, a communications line of unparalleled flexibility and efficiency. The entire force can be air-transportable in both land- and water-based supersonic jet planes with a range of strategic mobility measured in thousands of miles—in hours rather than days.

It can have an operational mobility

in smaller aircraft permitting battlefield movement by divisions and corps with the freedom of World War II squads and platoons. It can be supported by missiles as well as attack aircraft.

But such a force cannot be built around UMT. We will need long-term regulars receiving adequate inducements to offset a rigorous training system. Each man in such a force should be a selected, volunteer, qualified airborne soldier inured to frequent jet-borne shifts from Arctic to Equator under rugged, simulated combat conditions.

The giant jet water- and land-based transports constituting the troop-carrier force must be as much a part of the task organization as the troops themselves. Planning and rehearsal must be as rigid and as geared to reality as the present system of Strategic Air Command readiness which includes target-

The striking force's range should be thousands of miles in hours rather than days. These ninety-two soldiers flew 2,000 nautical miles in eight hours and five minutes in Lockheed's new prop-jet C-130 troop and cargo transport



briefed crews and various special forms of pay for professional skills.

Bring up the old pros

The nucleus of this force must be a hard-core, professional airborne fighting force equipped with a variety of weapons. It must possess and continually train with a strategic air-transport force having enough land-based, and especially sea-based, planes to move division and corps size units thousands of miles on a few hours' notice. These aircraft must be able to land in relatively primitive areas and must be so fast that the chances of enemy interdiction are minimized. They must be supplemented by naval task elements organized to assist in securing a far-shore base of operations.

Such a force is expensive, but an indecisive limited war which drags on and on, draining the very substance of a nation, is even more expensive. The cost of a surface-bound World War II type of army, based on an elaborate port and depot system with mountains of supplies tied up in a complicated ocean and railway pipeline and tremendous reserve stocks, is staggering. Much of this expense can be eliminated by an integrated logistics system keyed to airlift in short-take-off-and-landing (STOL) type aircraft and overland cargo vehicles having improved off-road and payload characteristics.

In addition to being less costly to operate, the very effectiveness and responsiveness of such a force will act as a powerful deterrent to peripheral aggression. The certain knowledge that powerful fighting forces exist, equipped for any kind of action from boundary patrol between small hostile nations to heavy counteraction in a "civil war" (meaning a Communist invasion), will do more to deter such aggression than a thousand SAC bombers—which are serving their own vital purpose of deterring the USSR from thermonuclear war.

Such a force cannot be developed as an adjunct to the Air Force or the Navy. The aircraft in which this fighting force moves strategically, operationally, or in the assault, are merely

vehicles serving the same purpose as the taxicabs which won the Battle of the Marne and the vessels which took our fighting armies to Normandy.

Weapons and mobility

More lethal longer-range weapons increase the total power available to every unit. Because communications and transportation means are so far superior to anything heretofore available, tactical elements will be able to cover wider zones of action. Added to this wider area coverage is the pressing requirement for units to keep moving, whether in defense or offense, to avoid attack by mass-destruction weapons, some of which will exist in sizes for close-in use. These small weapons will have the force of the multi-battalion artillery concentrations of World War II but will multiply their effect in a fraction of a second. There will be fewer moral or deterrent objections to using such weapons than for using the larger variety.

Increased requirements for mobility will call for more aircraft and amphibian surface vehicles for ground forces, capable of operating in undeveloped areas with a minimum of construction effort. Such equipment will soon be available in the vectored wing, boundary layer control types, the convertiplanes and other aircraft concepts, and in the new off-road equipment of the construction industry. This equipment revolutionizes payloads and maneuverability. Linked to new thinking in the programming of predictable logistical support and the meeting of spot needs by long-range electronic equipment and airlift, it will radically improve the logistical support system.

The cumbersome logistical land tail will be eliminated by land- and water-based aircraft, and large versatile surface vehicles that deliver supplies directly from ports to division and combat command areas. Such operations, directed from offshore or coastal bases far enough from the threat of an enemy strike, minimize interference with administrative support operations.

We can now visualize aircraft flying five hundred to a thousand miles from a coastal area to supply parts for combat vehicles in the combat zone and landing directly behind requisitioning units.

Transport replaces stockpiling

The essence of such a system will be transport, not stockage. All-weather

aircraft will be used for critical, special and unpredictable items like parts and assemblies. Moving on a long-range programmed basis, surface transport by giant amphibian vehicles can provide a major part of the predictable lift, particularly bulky cargoes like fuel, food and ammunition.

The employment of small-yield atomics instead of vast quantities of conventional artillery ammunition may reduce the need for tremendous tonnages of shells, and engine improvements may be expected to hold fuel needs within reasonable proportions.

German experience in World War II proved that well-organized partisans can disrupt ground logistical operations by attacking pipelines and railways. On the eve of a major Soviet offensive some fifteen thousand guerrilla raids, literally destroying the German logistical capability, were made at a moment when the full weight of Soviet front-line strength was pounding against the German defenses.

Instead of vulnerable stores retained in forward areas with consequent administrative demands on personnel, all but the most continuously consumed types of supply and the most elemental forms of maintenance and hospitalization can be stored hundreds of miles in rear in coastal or offshore support areas.

The communications zone as it has existed need no longer be required in a theater of operations. Support brigades backing up specific corps or field armies of the force can serve as ports of entry into the theater for supported units. They can be coordinated by theater army headquarters, and can operate necessary refueling, transfer and reserve stockage areas when such facilities are necessary in the area between ports and fighting divisions. The range of aircraft carrying eight to ten tons of cargo, landing on 500- to 1,000-foot strips, will be steadily extended to distances of 1,000 to 2,000 miles, permitting the support system to provide necessary supplies more quickly from such bases than is possible today from depots less than fifty miles away.

Such a system offers the only real hope of continued support in the face of enemy nuclear and air power.

Make no mistake: Destroying the enemy and his will to fight is still the ground soldier's burden. In the face of strategic stalemate, let us not be so ready for World War IV that we lose World War III.

Major Thomas J. McDonald, Ordnance Corps, wrote "Time for Command" in the June issue. Until recently he was Ordnance Special Representative at CG-SC, and is now attending Babson Institute.



KEEPING THE CURRENT DETERRENT ON ITS TOES

MAJOR JOHN H. CUSHMAN

KEEPING fighting units in fighting trim is the Army's No. 1 job. This may be "peacetime," but the outfit in training today could be in action next week. Korea could happen again.

How can we maintain top-notch outfits without the pressure of a shooting war?

First we must decide what we want. Do we want garrison soldiers or field soldiers? The garrison soldier won't win your war, so let's aim at the field soldier. Train him for the field and accept spit-and-polish standards somewhat less than those of a palace guard.

Give the field soldier time to clean up, make him stand garrison inspections, see that he is properly clothed, instill into his training confidence and unit pride. On the street he'll look like what he is: a conditioned, ready fighting man the Nation and its Army can be proud of.

But don't distract him with extra sets of web equipment and a shiny

Major John H. Cushman, Infantry, is a 1944 graduate of West Point. He served as S3 and battalion commander of an infantry regiment in Europe and is now on the faculty of CGSC. He is also Secretary of the Henry Leavenworth Chapter of AUSA.

helmet liner for parades. That sort of eyewash merely wastes time and money. Let him spend his time keeping his working tools ready, not putting a high shine on footlocker brass.

Live up to high standards

One principle of leadership is to set standards high, then see that they are met.

Most men prefer to work hard to meet the highest possible standards rather than drift along in a rut. Soldiers curse the leader who makes them sweat, but when they attain his standards their pride of accomplishment is the sweetest of rewards.

Achieving high training standards preserves units in battle. The outfit that habitually digs in deeply without being told, observes camouflage discipline, eats chow or gasses up quietly, and insures its security on the move and at halts lives longer. The leader who accepts less than the best trades away his unit's battle value.

The leader's task is simply stated: see that the job is done the right way, every time, and accept no substitutes. This takes guts, but it builds proud outfits that perform their combat mission and survive.

Bear down on training programs

A well-trained battalion is a structure of well-trained platoons, specialists and leaders. Concentrate tactical training on your handiest unit: the platoon. Here you can work day in and day out on the individual soldier *and* on the small team. Devise battle drills for standard attack, defense and delay situations, and all the rest, so that you develop teamwork that clicks every time. Insist on attention to details of individual skills, of security and intelligence, of use of supporting fires and of speed of maneuver, of maintenance and all the other essentials. Develop four or five men in each platoon who can take charge and run it. Through competition build *esprit* where it is sorely needed: in the platoon.

At the same time train your specialists, above all aiming at top-flight commo and maintenance men. Select them early, pick them smart, send them to school, back up the commo officer and the S4, bear down on commanders, and you'll get what you want.

Work on leaders, too, from platoon sergeants up. With chalk talks and terrain walks, skull sessions and bull

sessions, drill them in the theory and practice of their profession. Get them to arguing, then ask for ideas.

Develop the battalion, slow-motion at first, then at cruising speed. If you don't get a good outfit in this way, man, you just don't want a good outfit!

Confidence begets confidence

The seasoned, self-confident outfit never lets you down. That confidence comes from the unit's knowledge that it is good, plus the collective feeling in each man that *he* is good. Two things tell a soldier he is good: the feeling that he is fit enough to lick any man his size or bigger; confidence in and identification with his weapon. He acquires a feeling for his weapon in only one way: through practice, on the range and off. A quarter to a third of the soldier's training time should be spent in firing his weapons. The infantryman must be able to operate every infantry weapon.

Our soldiers need physical hardening, for the self-confidence it provides and to put them into shape for battle. Our people trail most of the world in the development of leg, back and shoulder muscles, and in endurance. The infantryman may move by air, truck or track, but he fights on foot, digs with a shovel, and carries loads uphill on his back.

The fit soldier, with a firm grasp on his weapon, is one of the finest specimens of the race. Put him into that shape, see that he knows it, and you have solved much of your problem.

Training saves pressure

Rugged training builds good outfits. But you can't push your outfit forty-four hours a week without its becoming stale. To keep a unit fit to fight at a moment's notice the pressure must be relaxed. What trainers of troop units need is policy guidance like this:

In garrison, train in the mornings only. Get everyone out, make it rugged but good, and you'll get far better results than all day at one-third interest level. For results are what we want, not entries on the training chart. Use afternoons for maintenance, schools, preparing training, administration, athletics, and relaxation.

During maneuvers or on the range, increase training time to make full use of facilities, with allowances for maintenance. On field exercises or maneuvers, train twenty-four hours a day.

Two or three times a year, knock off

training for a week or so and have a big cleaning and maintenance session, followed by detailed inspection. Put this policy into effect and you will have better units the year around. Your men will be happier and stick around longer.

Teach what's important

Is it more important for each rifleman and gunner to know how to reduce a stoppage in a machine gun, or how to adjust artillery fire? How to arm a mine, or how to issue an operations order? How to kill a tank, or how to measure road distances from a map?

Let's face it: in every rifle company there are good men who will *never* learn all these things, if they try for thirty years. Too many soldiers don't know survival methods, yet we spend time trying to teach them things that are "nice to know."

Noncommissioned officers must know how to read a map and how to make fire adjustment, but let's not try to teach these to every man. If a couple of men in each squad get the tricky points after two or three exposures, call yourself lucky and stop right there. Be sure every man knows how to do his basic job and survive, before you resume.

The rifleman or the gunner needs to know only a few things, but he must know them thoroughly. Decide what those things are, reduce them to their simplest forms, be sure each officer and noncommissioned officer knows them well and can pass them on to their men so that they will never be forgotten.

They learn through leaders

Troop units need strong lines. The chain of command grows strong only through exercise. Training is the soldier's daily work. If he gets it from outside his chain of command the strong links become weakened. Make *your* leaders train them. If your leaders don't know the essentials of their men's jobs, or can't teach them, they have no place as commanders. Train them or replace them.

Put the heat on commanders. Set standards high, give leaders time to train, help them in preparing. Encourage them to add their own ideas of "how" to their training, but make them produce. Inspect, encourage, correct.

Do all of this and you'll have leaders and platoons that will be ready for another Korea.

Officially termed a "regrettable" incident, 23 men died and 162 became casualties on 10 May 1918 because one outfit wasn't prepared for a gas attack. Question:

COULD IT HAPPEN TO YOU?

COLONEL JOHN L. MILES



This wasn't an outfit of the 26th Division but it does demonstrate field artillery in action under fire of enemy gas shells in 1918. The outfit is Battery A, 108th Field Artillery

THE officers of the 26th Infantry Division at Boucq, St. Agnant, and in the Bois Brule in May 1918 were skilled and capable, as you are, and they had had experience with enemy gas attacks, which you have not. What happened was that twenty-three men died and 162 became casualties in a gas attack on the morning of 10 May 1918. Official reports called the incident "regrettable." It was only a small engagement that no one has bothered to write up in detail. The bits and pieces, however, can be found in the National Archives. Together they form quite a story. The dates are important.

This is how it happened.

I

Field Orders 26th Div. A.E.F.
No. 28 26th April 1918, 16 o'clock

1. Indications point to an attack by the enemy from the direction of APREMONT WOODS.

2. Our troops will withdraw to the line. . . .

3. (a) Our reserve troops in the line of redoubts will be ready for counterattacks. . . .

4. All precautions will be taken against gas. Masks will be worn at the alert.

By command of Major General EDWARDS:
DUNCAN K. MAJOR, Jr.
Lt. Colonel Infantry
Chief of Staff

II

HEADQUARTERS TWENTY SIXTH DIVISION
American Expeditionary Forces

France, April 26, 1918

MEMORANDUM FOR CHIEF GAS OFFICER, 26th
DIVISION

The following is quoted for your information, "A German prisoner captured this morning by the 10th Colonial Division reports that the Germans are preparing an operation to begin at once with gas MINNENWERFERS [sic]

on the whole front of the APREMONT WOODS. These minnenwerfers [sic] are located in the third and fourth German lines in the following named trenches:

Trench Sorrau
Trench Bautzen
Trench Lauben

and along the line from point 3211 to point 3511 and from point 4113 to point 4343.

CHARLES H. MORSE
Captain, Field Artillery
Assistant to G-1

1st Ind.

Hq., 26th Division, A.E.F., 26th April 1918; to G-1, G-2, and G-3, for their information and guidance. Special cautions against gas to be exercised.

By command of Major General EDWARDS:
DUNCAN K. MAJOR, Jr.
Lieutenant Colonel, Infantry
Chief of Staff

[Rubber stamp]
Received Chief Gas Officer, 26 April

III

26th Division, A.E.F.
Second Section, G.S.
No. 25

SUMMARY OF INTELLIGENCE

April 26th to April 27th, 1918
Noon to Noon

* * *

VIII. ESTIMATE OF ENEMY'S INTENTIONS.

The enemy seems to be unusually active with a view to holding as many as possible of our troops in the sector. Indications point to an infantry and gas attack—probably to the west of this sector.

ON the nights of 30 April and 1 May, the 103d Infantry Regiment took its position in the Bois Brule and the sub-sector Inde—"the west of this sector." Although the ground was principally a plain of flat marshy land, there were a

few small hills, which were dominated by the German positions on Mont Sec. The lines were badly weakened from the heavy shell fire. Mud and water were deep, and there was a scarcity of material for duckboards. The trees of the Bois were badly shattered, so that men on patrol felt they could escape detection if they "made a noise like a stump." The redoubts themselves, about two hundred yards from the enemy lines, followed the crest of a rocky hill which was not considered vulnerable to a gas attack.

During 2 May, the division gas officer requested G2 to have photographs taken of the suspected area of Apremont Woods, but no indication of an enemy projector position was found.

IV

HEADQUARTERS 26th DIVISION G-3 American Expeditionary Force

France, May 3rd 1918

MEMORANDUM for the Gas Officer:

The Officer inspecting subsector Inde on the night of May 1st-2nd reports as follows:

"The dugouts have been provided in the past with gas curtains, but at the present time, almost without exception, the curtains are unclean, generally hanging from one nail on the side of the door, or so torn as to be of no protection."

The Commanding General directs that you take the necessary steps to have this corrected with as little delay as possible.

A. A. MAYBACH
Major, General Staff
A. C. of S., G-3

The gas officer forwarded this report to the commanding officer, 103d Infantry, on 6 May, but there is no record that he received it, or what, if anything, he did about it. Lieutenant E. A. Carter, his gas officer, does not mention it.

On 4 May aerial photographs were again taken of the suspected area and delivered to G2. These photos showed what was thought might possibly be a projector emplacement. The interpreter apparently was not familiar with the manner of preparing a projector position, nor did he realize that the design of the position identified the target.

Company D, 103d Infantry, held Bois Brule on the night of 9-10 May with a strength of approximately six officers and 188 men, many of them in the draw below Inde. To the left was a working party consisting of parts of Company F, 101st Engineers, and Company G, 103d Infantry, in charge of Lieutenant Ernest J. Kluge, gas officer of the 101st Engineers.

The night was dark, warm, without wind and, for once, it was not raining.

AT 0120 there was a flash of light, easily visible from Brule, but not readily seen from Inde. The noise of the explosion was heard by all who were awake. Seconds later, three hundred—some say six hundred—18cm projectiles,

with sparking fuzes, tumbled into the sector held by Company D. Fuzes had been set for thirteen seconds. The "watermelons" began exploding about three or four seconds later.

Lieutenant Kluge, on observing the flash and hearing the explosion, apparently recognized it as a projector attack and ordered the working party to mask.

In Company D no alarm was given until after the projectiles had landed. At least eight men were gassed before their masks could be adjusted, six dying within five minutes. A direct hit on a dugout killed three and wounded two. Lieutenant Wykoff, in command of Company D, gave orders to fan out shelters, to disinfect the ground, and to require all men to wash their hands and mess kits before eating again. Then he went through the trenches, waking sleeping men, and devoting his attention to evacuating casualties.

About twenty minutes later (0140) the Germans began a bombardment of high explosive, shrapnel and gas shells from artillery and trench mortars, which continued for five hours.

Sergeant Watham heard the explosion and smelled the gas. He immediately put on his British respirator. Shortly after, he was knocked down a couple times by the bombardment. He had such a hard time seeing that he eventually changed to his French mask.

Sergeant Stiles also heard the gas alarm as he smelled the gas. He adjusted his respirator and made the rounds of the trenches to see that all men were awake and wearing masks. He, too, was knocked down several times by the bombardment, disarranging his mask. Still, he continued to fan out dugouts and disinfect shell holes with chloride of lime until he became a casualty.

In the meantime, four men became hysterical and not only refused to put on their own masks, but began to pull them off the others.

Corporal Mousette, in a dugout, put on his mask and remained there for about twenty minutes, then with his men stood to for the expected raid.

AT St. Agnant, Lieutenants Gillis and Frothingham, platoon leaders of Company B, heard the gas alarm from Company D, awakened their men, but did not order them to mask until the odor of gas was perceptible to them, about 0150. They remained masked for two hours.

Lieutenant Kluge delayed moving his working party from the trenches until 0320 for fear that the men wearing masks would lose their way or remove the masks in order to see or breathe more easily. As he marched his engineers away from the area still wearing their masks, the infantrymen laughed at them. The infantrymen had removed their masks as soon as they started out. Only one engineer became a casualty.

Back at Inde, casualties were increasing rapidly. Their evacuation was being carried out as smoothly as possible with the battalion medical detachment, band, and the battalion and company officers freely furnishing litter bearers. At one time only six men with automatic rifles were holding the company front.

At about 0530 Sergeant Watham removed his mask, but replaced it again at about 0600 on command of his platoon leader. The command to remove masks was finally given to the company at about 0830, after the men had worn them for more than seven hours.

Colonel John L. Miles, *Chemical Corps*, is a 1923 graduate of Dartmouth College and was commissioned in the Chemical Warfare Service Reserve in 1926. He was chemical officer of the 80th and 26th Infantry Divisions during World War II, and served later with Seventh Army and VII Corps. He is now a member of the U. S. Army Chemical Corps Board. He wrote "Let's Put Sense in CBR Training" in the December 1954 issue.

At 1700, Company B was sent from St. Agnant to relieve Company D. The route was up one hill, a march of about a kilometer across country, and then up another steep hill to their position. As the men climbed the hills, they began to drop as casualties. Both Lieutenants Gillis and Frothingham were among them. Company A, which had not been attacked, had to be sent to relieve Company B.

At 1800 on 10 May—sixteen hours after the attack—the division intelligence informed the artillery that the projector position located by the photograph (taken 4 May) was a target.

Gas casualties, exclusive of ballistic casualties, were Company D, 93; Company B, 31; Machine-Gun Company, 30; others, 31; total, 185 with 23 deaths.

Company D, with more than half of its strength gone, had had to be relieved immediately; Company B, as soon as possible. No counterattack could have been possible. It was fortunate that the enemy did not follow up the gas attack with an infantry assault.

THAT is what happened, in so far as it is possible to paint a picture from documents and records thirty-nine years old.

If blame can be fixed for this "regrettable" incident, it should probably be placed on training, which failed significantly to picture for each officer and man what could and actually did happen. Such training as they had had lacked sufficient realism to make gas defense and discipline a part of their experience.

"Organization commanders were not made to realize . . . that . . . no matter how well trained their units might be in their particular branch of Service, if deficient in gas defense, their wonderful ability would avail them nothing."

For this failure, Corporals Ingersoll and Jackson and twenty-one others paid with their lives. Twenty-three names were added to the total of "needless dead" that grew fantastically during the remaining months of the war. In another war, a similar failure could mean greater disaster.

It is possible from this incident in the Bois Brule to extrapolate to present hazards and to determine therefrom the adequacy of a unit's training.

The 26th Division had fourteen days' warning before the attack. Positive identification of the projector site and target could have been made on 4 May—five days before the attack. It was made, you will recall, from the photographs taken on that day. The emplacement could have been destroyed by artillery fire, with the bonus that the gas, if already loaded in the projectors, would have been released within the German lines.

Instead of projectors, which are laborious and difficult to emplace and have only limited range, present armies have missiles of considerable range which can be brought forward quickly and easily. Intelligence of an impending attack will have to be handled positively and quickly.

Such protective shelters as exist must be kept usable. In this attack they were somewhat effective, for Corporal Mousette, at least, was able to continue his mission and did not appear on the gas-casualty list. Whether the order to take "special cautions against gas" was obeyed is not known. Shelters for CBR will of necessity be more complex and more difficult to maintain. What provisions for passive defense against gas do you habitually plan?

The gas used was phosgene, an agent now considered obsolete because of its characteristic odor and low lethality. It was a nonpersistent gas and was supposed to dissipate in minutes. The men in the target area had to remain masked for seven hours. Can your unit continue its mission in masks for seven hours? How will its efficiency be reduced, and by how much?

In Company D, no alarm was given until the projectiles had landed. There were still three or four seconds before the gas was released. That was not enough warning. At St. Agnant, although the men had been awakened and were alerted, they did not mask until they smelled the gas. That was too late. Lieutenant Kluge ordered his men to mask as soon as he heard the discharge of the projectors. His group fared well. Modern gases are odorless and at least one hundred times more lethal than phosgene. What will be your problems of detection and alarm, and how will you solve them?

Lieutenant Wykoff and Sergeant Stiles apparently had mapped out courses of action for themselves during a gas attack. Word of the nature of the attack seems not to have reached division headquarters until late in the day, as it is noted as an addendum to the intelligence summary which closed at noon. Should the lieutenant have devoted his efforts to evacuating casualties? Or should he have given more attention to getting the word back? Should he have detailed litter bearers? Or, if your company is reduced to about six men, does it matter?

Four men started a panic, refusing to mask and pulling masks off others. There is no record of the corrective action taken, though it undoubtedly was. After the panic starts, it is too late to avert it. Have you visualized the possibility?

Many men removed their masks without order while still in a dangerous concentration of gas and were ordered to replace them. The commander's order to remove masks came at 0830, when a sniff test indicated that no more gas was present. The sniff test is no longer feasible. Detection kits are necessary. Do selected men know how to use them? Where will the men and kits be, and will they be together?

Company D was practically ineffective from 0130 until 1700, when it was relieved by Company B, only partially effective, which in turn was relieved by Company A. Only the inaction of the Germans saved that situation. What plans do you make for your unit, and will they take sixteen hours to execute?

With the prospect of a nuclear stalemate, the use of chemical agents becomes more attractive to the enemy. It promises not only large casualties, but the possibility of capture of large quantities of military supplies and equipment, without the destruction characteristic of the atomic bomb. The enemy has the initiative and the capability to decide whether and when to use chemicals. He has learned the hard way that against poorly trained and equipped troops, a chemical attack can be catastrophic.

If such an attack comes, what will happen to *your* outfit? At Inde, almost everyone, regardless of rank, had the opportunity to make his contribution. If you, as commander or staff officer, have trained yourself and your men to the point where you can take a chemical attack in stride, with the minimum of disorganization and casualties, no one will research your files years later to determine what happened.

THE MONTH'S READING

Minimum-risk Development

DR. WERNHER VON BRAUN
From Redstone to Jupiter
Missiles and Rockets
June 1957

The Army has pursued a minimum-risk program in the development of the Redstone and Jupiter ballistic missiles which provides optimum development and performance.

Basically it provides for the thorough testing of every component and minor and major assemblies, prior to launching of the missile.

There is a tremendous difference between delivering a block of research and development missiles to the proving ground, and firing them successfully on schedule. The former is essentially a question of shop capacity. The latter depends on the capability of the engineering team to evaluate flight results correctly and rapidly, make necessary changes, and furnish the modified missiles with a sufficient degree of reliability to the firing crew.

This development cycle—discrepancies uncovered in flight tests leading to modifications of further test missiles which are half-completed on the assembly line—is quite slow, thus it is difficult for even the most closely integrated team to keep the experimental missiles firing at frequent intervals.

The Army's Redstone and Jupiter missile programs are being handled by a closely-knit and tightly integrated team with many years of experience in the ballistic missile field. This team consists of experienced scientists and engineers of virtually every field involved in this relatively new art. It includes rocket engine men, structural engineers, physicists, aerodynamicists, gyro experts, electrical network specialists, as well as test stand engineers, tool designers and fabrication engineers.

Army Readiness and National Survival

HON. WILBER M. BRUCKER
Statement before Subcommittee No. 1 of Committee
on Armed Services, House of Representatives
4 February 1957

The active uniformed Army consists of one million young men and women. This is obviously too small a force of itself to meet expanded global commitments resulting from our acceptance of free world leadership. Congress has provided that there shall be sufficient Ready Reserve forces to supplement the active Army. Congress expects such Reserve forces to be equipped and to be of

sufficient size, quality and training to back up and support the active Army with a degree of combat readiness that furnishes adequate and genuine Reserve Forces in being. The Russians have two and a half million in their active ground forces, and the Chinese Reds account for another two and a half million. In addition, the satellites furnish three and a half million, making a total of eight and a half million soldiers in the active ground forces on the Communist side.

Let's not forget that our Army is holding the Iron Curtain line, and the Bamboo Curtain line in Europe and Asia.

No nation stands between our country and these tremendous forces to protect our people until military forces can become ready. The time has long since gone by when our two oceans or any element of distance can protect us if our forces are not ready. Technology has shattered the time barrier which has in the past given us an opportunity to build Reserve forces after D-day.

We are face to face with the stark reality that any Reserve forces that will count must be in a high state of readiness at the moment D-day arrives. It will be too late to start training when the blow comes. We will need forces in being, we can't afford to wait for time consuming reorganization because individual members of our Army Reserve forces lack training. The requirement of having a Ready Reserve force in being should apply to the Army National Guard just as it applies to all of the other military forces of our atomic age.

As a matter of fact, the requirement for a high standard of combat readiness applies particularly to the Army National Guard because it has been given the honorable assignment of furnishing the first major combat elements of the Ready Reserve. Several National Guard divisions are assigned to keep our overseas commitments in the event of war and these Army National Guard divisions are expected to be ready shortly after M-day. Following M-day we have a mobilization requirement that demands an outloading operation in which nothing can slip if we are to have the combat readiness of forces necessary to our fighting requirement.

In short, in the modern world with its demand for precision performance we must reject any tendency to yearn for continuation of the "status quo" or the "good old days." We must face up to the grim realities of this new atomic age and have a Ready Reserve that lives up to its name, by being actually combat-ready. The terrific confusion and downright disaster attendant upon D-day forever close the door upon arguments of easy convenience or local expediency. National interest and national survival have become paramount.

When Our Educators Slipped

HENRY M. WRISTON
Education and the National Interest
Foreign Affairs
July 1957

In the year 1940 an impressive list of names associated with education was attached to a pamphlet published by the American Council on Education, the most widely recognized organization dealing with the total educational program. It was called *What the High Schools Ought to Teach*. Its substance was of great importance; its tone was even more significant. It regretted even the modest amount of mathematics taught, and even the teaching of English, on the extraordinary ground that these were "difficult" subjects. They were described as "stumbling blocks," insistence upon meeting standards of lucid and effective English and upon reasonable mathematical literacy had the effect of driving students out of school and thus were undesirable. The study of foreign languages was seriously deprecated; a "course in general language" was suggested as a substitute. As for science, "only a few pupils need advanced mathematical physics." Every established study had to face a "pragmatic" test: "What's the good of it?" All too often the "good" had to be tangible and marketable.

The pamphlet was saturated with the dejected spirit engendered by the depression. At that time, it was held that Hitler's rise was aided by people educated beyond their opportunities; many saw a like situation coming to dominate American education. There were not only "too many" engineers and scientists; too many young people were going to college. High school had been raising too many "white-collar" hopes; fear was expressed lest in the backwash of unemployment youth become disillusioned with the American system and fall prey to Fascism. In "the statistification of a mood," figures were produced to "prove" that we faced a dangerous intellectual glut. . . . As late as the spring of 1950, government statistics led to a prediction that only half the graduating engineers would find employment; thereupon applications for admission in that field fell off sharply. At the same time it was "proved" that there was a "surplus" of high school teachers. Transient situations were projected into the future.

The pamphlet on *What the High Schools Ought to Teach* did not raise a storm because it was not nearly so much a new program as a rationalization of what had already been spreading through the school systems during the depression. When the Second World War ensued, it was discovered, to the horror of the armed forces, that the level of mathematical literacy was far lower than it ought to be. The reason lay in the persuasiveness of the point of view expressed in a pamphlet of which the public had heard little or nothing. Mathematical requirements had been whittled down so far as to produce results adverse to the national interest, not to speak of the intellectual impoverishment of unnumbered individuals. The pamphlet which symbolized and stimulated this drift failed to lay emphasis upon the almost magical effect which better teaching could have produced both in the use of our

mother tongue and in one of the most precise instruments of human thought. All its emphases were negative; small wonder the consequences were also negative.

The Problem of Selecting Concepts

HENRY A. KISSINGER
Nuclear Weapons and Foreign Policy
Council on Foreign Relations, 1957

The qualities of our leadership groups were formed during a century or more of primary concern with domestic development. Politics was considered a necessary evil and the primary function of the state was the exercise of police powers. Neither training nor incentives impelled our leadership groups to think in political or strategic terms. This emphasis was compounded by our empiricism, with its cult of the expert and its premium on specialization.

The two professions which are most dominant in the higher levels of Government—industry and the law—can serve as an illustration. The rewards in industry, particularly large-scale industry, are for administrative competence; they, therefore, produce a tendency to deal with conceptual problems by administrative means, by turning them over to committees of experts. And the legal profession, trained to deal with a succession of discrete individual cases, produces a penchant for *ad hoc* decisions and a resistance to the "hypothetical cases" inherent in long-range planning. Our leadership groups are, therefore, better prepared to deal with technical than with conceptual problems, with economic than with political issues. Each problem is dealt with "on its merits," a procedure which emphasizes the particular at the expense of the general and bogs down planning in a mass of detail. The absence of a conceptual framework makes it difficult for them even to identify our problems or to choose effectively among the plethora of proposals and interpretations produced by our governmental machinery.

This explains many postwar Soviet successes. Whatever the qualities of Soviet leadership, its training is eminently political and conceptual. Reading Lenin or Mao or Stalin, one is struck by the emphasis on the relationship between political, military, psychological and economic factors, the insistence on finding a conceptual basis for political action and on the need for dominating a situation by flexible tactics and inflexible purpose. And the internal struggles in the Kremlin ensure that only the most iron-nerved reach the top. Against the Polituro, trained to think in general terms and freed of problems of day-to-day administration, we have pitted leaders overwhelmed with departmental duties and trained to think that the cardinal sin is to transgress on another's field of specialization. To our leaders, policy is a series of discrete problems; to the Soviet leaders it is an aspect of a continuing political process. . . . Even a mediocre professional will usually defeat an excellent amateur, not because the amateur does not know what to do, but because he cannot react with sufficient speed and consistency. Our leaders have not lacked ability, but they have had to learn while doing, and this has imposed too great a handicap.



Slipshod Slipstick or



Functional Components?

Too many hinges and no screws (or the wrong kind) drive construction engineers blueprint daffy and overload the supply system

RICHARD W. O'NEAL

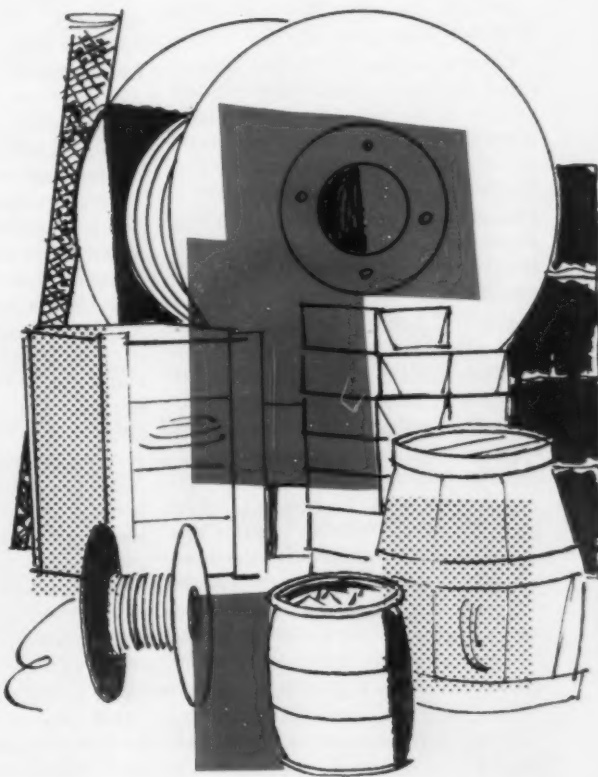
HOW many sixpenny nails, would you say, will be needed in the first year of an invasion of the Soviet Union by six field armies? Can we multiply the number of men by some constant like three meals a day? Nope, that doesn't work. Well, maybe the amount of nails should be based on the number of hammers. Or maybe the hammers are based on the nails.

The Corps of Engineers has been wrestling with this problem for a long time. It's a big problem too, because engineer construction and fortification materials constitute about forty per cent of *all* supply tonnages (exclusive of POL and ammunition) shipped into an active theater of operations. Furthermore, engineer supplies must be tailored to the physical conditions prevailing in the objective area.

Well, how is it to be done? The method of approach in the past was to assign engineer planners the job of developing designs and engineering drawings covering the construction and rehabilitation required to support

Richard W. O'Neal spent almost eleven years on active duty, mostly in the Corps of Engineers. During the Second World War he served with an armored engineer battalion. He has been an instructor at the U. S. Army Engineer School, and was an Engineer staff officer with Eighth Army in Korea. Since February 1953 he has been a civilian employee in the Requirements Division of the Office of the Chief of Engineers.

AUGUST 1957



the operational and logistical plans. The planners then laboriously converted these designs into quantities of construction supplies. Let's hop into our time machine and take a trip back to the Prefunctional Components Era.

Difference in individual standards

Behind a cluttered desk we find Major Slipstick furiously "computing" hospital construction requirements, while, at his elbow, Captain Cosine is estimating the quantities of engineer items required for troop housing. Both planners are governed by the same operational plan and construction policies. Unfortunately, however, Major Slipstick's standards, while probably just as good from an engineering standpoint, are a little different from those cherished by the captain. In the major's old outfit (Ajax Construction Corporation) safety factors of fifty per cent were standard. Not so in the penny-pinching firm where Captain Cosine spent years working on an allowable factor of plus ten per cent.

So the major's background means that he uses a few more nails than necessary. So what? Well, there's more to our story. The diligent major remembered, when making up the bill of materials, to include doors for the buildings, including three hinges for each door. For some reason he forgot that each hinge required eight screws.

Captain Cosine, meanwhile, remembered the hinges, but allotted only two to each of his doors. He also remembered the screws, so he included them in the bill of materials—nice, shiny, flat-headed, needle-point brass screws. Unknown to Captain Cosine, his shiny screws were unique in the theater's entire construction program. Other planners doted on steel screws.

Silly? Not at all. Serious? You bet your life! The lack of uniformity in detailed design and the wide variety of commercial items suitable inevitably resulted in requirements for many more types of items than were actually needed. The final report of the Chief Engineer, European Theater of Operations, for World War II contains this statement: "It is believed that the number of items included in the planned operational requirements as estimated for the invasion of the Continent might have been reduced by as much as 50 per cent without detriment."

Too many items was only part of the problem. Too frequently an imbalance existed in those supply stocks actually

on hand or needed. Multiply ten thousand variations in design by fifty planners with the resultant requirements expressed in terms of a wide variety of commercial materials and you'll get a vague idea of why stocks might become unbalanced.

Obviously, something had to be done. The engineer operational planner had to be restored to his proper role and relieved of the onerous task of developing detailed designs and bills of materials. A requirements planning tool had to be developed which would facilitate the conversion of anticipated construction effort into the minimum numbers of supply items required.

Functional Components System

The Engineers have developed such a planning tool and bestowed upon it the awesome appellation, "The Engineer Functional Components System." Technically, this system can be defined as a method of expressing over-all magnitudes of construction required to support military operations in terms of multiples of typical construction tasks. Let's see what that means. Type designs and engineering drawings have been developed for a variety of structures (such as mess halls) and services (such as electrical or sewerage systems) under differing physical conditions and situations. For example, there is a different design and bill of materials for a mess hall to be built in mountainous arctic terrain under a semipermanent standard of accommodation than for a mess hall to be rehabilitated under austere standards in tropical areas with flat rolling terrain. In other words, there will be a distinctive design and bill of materials for each individual structure or service for all combinations of terrain, climate, type of construction, and standards of accommodation. The type may be either new construction or major rehabilitation. The standards in the Functional Components System vary from the primitive to the semipermanent. Each of these many designs (hereafter referred to as "facilities") has a related detailed bill of materials identified by its own distinguishing code number. In addition, each facility is accompanied by an estimate of the man-hours of effort required and the weight and cubage of the items concerned. The fact that the designs and bills of materials have been worked out in advance means that no item has been overlooked and that a proper balance exists in the types and quantities

of items required. Also, to insure that the absolute minimum number of items are procured, stocked, and issued, the items in all bills of materials have been compared and "standardization" effected in every instance not detrimental to basic design. This means that Captain Cosine's bright, shiny screws can no longer sneak into the supply system. Selected types and numbers of facilities in turn make up specified installations such as a 2,000-man or 5,000-man troop camp or a 1,000-mile pipeline. Related installations are grouped into functional areas or components such as administration, combat, general supply, and camps, which in turn comprise the assigned construction mission such as a base section or a large port complex. This arrangement provides a logical and systematic approach to defining what construction is to be accomplished (see chart).

Using the FCS

Now let's journey into the future and watch Lieutenant Colonel (formerly Major) Slipstick computing requirements with Functional Components. Colonel Slipstick has been assigned the job of estimating phased requirements for hospital construction in the first six months of an amphibious invasion of Euphasia. Through liaison with DC-SOPS, The Surgeon General, and others, and through research in the operations plan, the logistics annex, and FM 101-10, Colonel Slipstick has determined that hospital accommodations must be provided for 60,000 casualties by D plus 180. Colonel Slipstick estimates, on the basis of intelligence estimates, that captured facilities will accommodate 40,000 casualties. Major rehabilitation will be required, however, for one fourth of those facilities; that means new construction is required for the remaining 20,000 casualties. Based upon policies and his knowledge of conditions, Slipstick has come up with the following requirement:

Forty 500-bed hospitals: New construction. Average terrain, temperate climate. Standard prefabs with water-borne sewerage.

Ten 500-bed hospitals: Major rehabilitation. Average terrain, temperate climate. Rehabilitate electric lighting, plumbing, and so on, of existing concrete structures.

The appropriate numbers and types of facilities (each with a bill of materials) are then selected. This gives item requirements and manpower estimates

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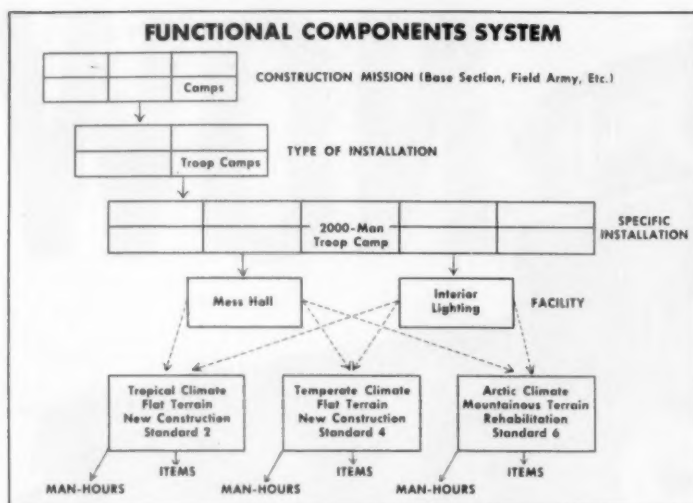


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which will be used in determining the engineer troop list. It boils down to this: An installation (500-bed hospital) consists of a grouping of various types and numbers of facilities. Each facility is related to certain conditions (climate, terrain, type of construction, standard of construction) and consists of detailed drawings and detailed bills of materials. The basic requirement is expressed in terms of facilities. Since each facility has its own peculiar code number, the engineer planner and the engineer supply man can readily communicate. This requires supply agencies to maintain records of facilities and their bills of materials.

Nails Are Nails

The Functional Components System is not primarily a supply tool. Supply agencies will continue to control, store and ship supplies on a line-item basis. Facilities will not be pre-packaged or earmarked in depot stocks. This can be illustrated by analogy. The Engineer Supply Control Office at St. Louis, Missouri, computes the world-wide requirement for 20-ton cranes on the basis of TOE and other authorizations. However, cranes in depot stocks or being shipped are *not* identified back to any particular planning document; they are issued to meet any authorized demand. The demand (theoretically) has been anticipated in the original total requirements figure. Similarly, stocks computed by the use of functional com-

ponents are available to meet any authorized demand. Nails are nails, regardless of whether they are used to construct a hospital or a depot. Suppose that the engineer planner determines that 4,500 miles of pipeline are needed in an active theater during a specified period. He computes the requirement by citing appropriate facilities; the ZI supply people explode these facilities into grand totals of individual items and ship to theater depot stocks. Within the theater constructing units, based upon assigned construction tasks, will requisition pipeline supplies *either* by line item *or* by facilities, whichever is the most logical. Regardless of the method of requisition, depots will issue on a line-item basis. The ultimate objective of the Functional Components System is to provide the theater with balanced stocks of construction and fortification materials related to the overall magnitude of construction anticipated. Consumption rarely follows plans precisely; this means that stocks rapidly start getting out of balance. The theater then must replenish its stocks on an individual line-item basis. It follows that the Functional Components System is most valuable during the early phases of active operations—particularly for automatic supply support. However, the system is not limited exclusively to any time phase or situation. What a blessing it would have been in Korea at the time of relocating the Communist POWs. The standard

drawings with their pre-established bills of materials would have permitted computation of requirements in a tiny fraction of the time which was actually required. These requirements would then have been requisitioned by citing quantities of a few code numbers.

Other Aspects of FCS

There are other aspects of functional components which have not been discussed. There will be equipment listings for augmenting troop construction units doing specialized work like tunnel construction or railway rehabilitation. The Functional Components System will also contain typical lists for equipping indigenous labor and construction units.

Some functional components will contain items of other technical services. For instance, a special type of medical sink is in one of the hospital facilities.

Further study is also being conducted to determine if the Functional Components System is the proper vehicle for other types of information such as estimated consumption of engineer expendables under typical conditions; for example, so many map pins and artillery protractors per type corps per month.

The Functional Components System is practically operational at present. A series of three companion Technical Manuals are now under development. TM 5-301 will contain introductory instructions and staff tables with weight, cube, and manpower data. TM 5-302 will furnish for theater of operations type structures general construction drawings, special and standard construction details, and simplified bills of materials for all types of construction included in this publication. TM 5-303 will contain complete bills of materials for types of construction covered by drawings in TM 5-302 as well as bills of materials for troop operations facilities and equipage.

In summary, let us remember that the Functional Components System is a requirements planning tool. It does not replace the project system. Rather, it is a quick and more effective method of computing the item requirements for class IV projects. It is readily apparent, too, that it will also provide a quick and efficient method of reviewing operational plans for their logistical feasibility. Colonel Slipstick is very happy with the Functional Components System. We hope you will be too.



HANDS OFF

W 4

THE BIRD

THAT'S ATTRACTED TO STRANGERS

Audubon never observed it—this new species that won't tolerate intruders in the sky, tracks them down, destroys them.

Raytheon has pioneered in the development of electronic missile guidance systems for more than a decade. A technical milestone was reached when the Navy's experimental Lark, equipped with a Raytheon guidance system, achieved history's first destruction of an aircraft by a guided missile.

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RADIO, TV & MICROWAVE TUBES—TRANSISTORS—MILITARY & COMMERCIAL EQUIPMENT

THE MONTH'S CEREBRATIONS

PROFESSIONAL SOLDIER OR PROFESSIONAL ATHLETE?

LT. COL. GEORGE JUSKALIAN

THE Army's sports program is not doing what it ought to be doing: getting the rank and file out for athletics. This program is supposed to build physical strength and stamina, develop competitive spirit and the will to win, and sharpen reactions. Instead, the sports program is simply perpetuating the "professional athlete" and doing little or nothing for the professional soldier. Obviously, something is wrong.

The answer lies in the fact that in each command echelon the emphasis is focused on producing champions rather than on developing better physically fit soldiers. The former, of course, attracts more publicity than the latter, and a commander's reputation may hinge upon the number of athletic trophies added during his tenure.

Although producing random champions may get good press coverage, it doesn't win battles. Battles are not won by a few champions; they are won by divisions and armies of physically fit soldiers. We can't have physically fit units if our sports program is set up so that most soldiers are spectators who watch a few experts play.

Most army areas and posts run their sports programs along similar lines. In any given sport—take basketball, for example—competition starts with company teams vying for battalion championships. At the end of company competitions, battalion teams are organized, using the best players from the various companies and forming a composite team. This is the point where the "professional athlete" takes over. The col-

lege star keeps playing while the beginner or bush-leaguer is forced out; where the best player goes on getting better while the poorer one stays that way.

At the end of the battalion level competition, a composite regimental or post team is organized from the élite of the battalion league. More perpetuation. This team then goes on to represent the post for the army area championship.

In all probability many of these same players will later represent the regiment or the post on the baseball team, and still later on the football team. By this time the calendar has gone full cycle. This is the process of breeding

This department is designed to accommodate the short, pithy and good humored expression of ideas—radical and reactionary, new and old. We pay for all contributions published but you deserve to be put on notice that the rate of payment depends upon the originality of the subject and the quality of writing rather than length. This department is hungry for contributions, so shoot that good idea in . . . today.

champions, of perpetuating the "professional athlete" at the expense of the rank and file of the professional soldiers.

What can we do to correct this system, to give the sports program to the rank and file?

The solution is simple: Leave team competition at company level. When a

company team has won the battalion championship, let it, rather than a composite battalion team, go on to represent the battalion in the regimental or post competitions, and then on to army competitions if it is successful in the intermediate playoffs.

Exponents of the *status quo* will object on the ground that leaving team competition at company level will result in less spectacular teams playing post and army competitions, with a resultant decrease in publicity and spectator appeal.

To this objection I say: Although less spectacular teams will undoubtedly result, there is no reason why one championship team shouldn't get essentially as much publicity as another, regardless of its make-up. As for spectator appeal, at one post where I was stationed it was a known fact that composite post teams, though more skilled than company teams, attracted fewer spectators because of the inherent *esprit* in a company as opposed to an artificially developed *esprit* for the composite team.

Leave team competition at company level and the Army will more nearly get its rank and file out for athletics. This in turn will lead to our ultimate goal: units manned with physically fit soldiers best suited for survival and success on the battlefield.

Lieutenant Colonel George Juska-lian, Infantry, after a hitch in the 4th RCT at Fort Devens, Mass., is under orders for MAAG in Iran. He wrote "Give the Corporal Back His Squad" in the May issue.

OUR SEMANTIC SNAFU

SFC FORREST K. KLEINMAN

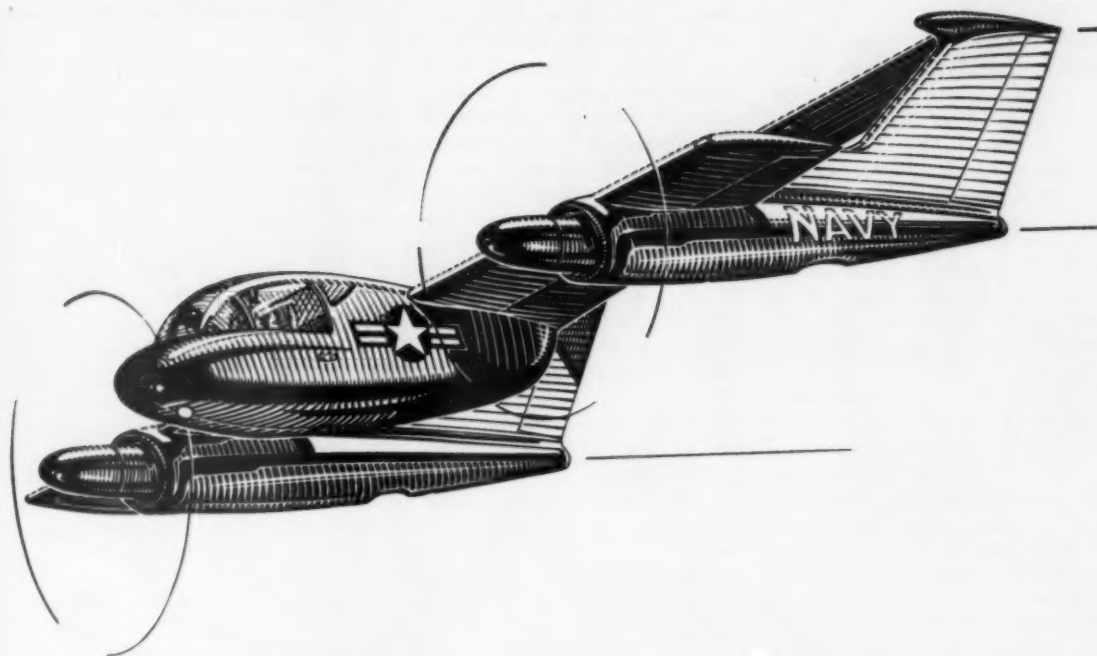
THE need for Army writers and spokesmen to heed Voltaire's classic, "If you would discuss with me, first define your terms," is as urgent today as the need for public understanding of the Army's role in modern war. Be-

fore we sound off, let's get together in the Army on what kinds of war we are talking about. Not only do we confuse the public by loose and contradictory use of terms, but we may talk ourselves right out of business!

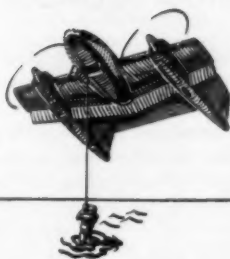
For example, consider the cumulative effect upon the public mind of these

familiar statements: ¶ The Army must be prepared for conventional as well as nuclear war. ¶ Nuclear weapons are now conventional in the Army. ¶ An unlimited nuclear war would mean the end of civilization—perhaps of mankind. ¶ The Army must be prepared to fight and

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win any kind of war—limited or unlimited. ¶ All wars are limited—not by weapons but by man himself. ¶ Another Korea is unthinkable; local Communist aggression will lead to unlimited war.

Seeing such seemingly contradictory generalizations often headlined on the same page in newspapers and magazines, John Q. Public can hardly avoid coming to one of these conclusions: (1) There is a wide and incompatible difference of opinion within the Army as to its own role and capabilities. (2) Any effort to resist aggression anywhere in the world will lead to mutual extermination. So why commit suicide by resisting? For that matter, why have an army? (3) What on earth are they talking about?

If you think I exaggerate the extent or gravity of our semantic snafu, I suggest you browse through the file of official speeches at the nearest Army public information office. Here are a few of the many terms you will see used synonymously to classify war: *total*, *general*, *unlimited*, *global*, *all-out*. More often than not they are used without further qualification. Hence it is left to the reader or listener to guess in which of these senses the author employs his superlatives: geography, weapons, targets, or all three. Taken in the last sense, *unlimited*, *total* and *all-out* are frightening superlatives indeed, for the Clausewitzian

ideal of war as "an act of force without limitation" is now readily reconciled with nuclear weapons and means of delivery already available to us.

True, we know that no Army spokesman (or any other rational man) actually contemplates a war without some kind of limit—whether it be limited in geography, weapons, targets, or all three. When men like Secretary Brucker and Generals Taylor, Gruenther and Wyman speak of war, we may be sure there is no real difference on this point in what they *mean* to say to the public, regardless of variance and contradiction in the terms they use to classify war. But the question remains: Does the public know what is meant? For that matter, how can we be sure we know what we mean in discussions about war within the service unless we define our key terms in advance and use them in the same context?

We faithfully follow this principle of semantics in our professional communication. In the language of operations, for example, such key terms as *line of departure*, *assault position*, *MSR*, *CP* and *IP* are always used to convey the same thought in the same way. We never use synonyms to symbolize them. Consequently, their meaning is clear-cut to every soldier. Consider for a moment the snafu in operations that would result if this were not so—if some of us used *attack line* for *line of departure* and others called it

coordinating position; while still others called the *assembly area* the *coordinating position*. This is precisely the sort of semantic snafu we invite by not heeding the same first principle in our efforts to communicate the Army story to the public.

An official lexicon of key terms to use in discussing the Army's role in national defense would do much to clarify the situation. However, Army writers and speakers need not wait for official guidance to begin the process of unsnarling our semantics. We can start with that next speech or article by resisting the temptation to sloganize our way over vast areas of thought.

Instead of trying to tell the entire Army story in ten minutes, we can take one aspect or one phase of it and explain our views understandably. Instead of trying to dazzle our audiences with a glib assortment of six-syllable synonyms, we can simply repeat the same words whenever they most clearly convey our thoughts. Instead of varying our classifications of war from page to page, we can vary our examples and similes. Instead of making our audience guess what we mean, we can provide plenty of signposts along the way.

Sergeant First Class Forrest K. Kleinman, an occasional contributor to ARMY, wrote "Look at the Cloth" in the June issue.

LET THE COMPANY COMMANDER PROMOTE

CAPTAIN THOMAS C. CLARY

THE recent announcement that the Army is considering the reestablishment of a testing program for enlisted promotions is most disturbing. That system was tried in the old career guidance program developed and instituted between World War II and Korea. It was cumbersome and never really got into full swing because it broke down during an emergency.

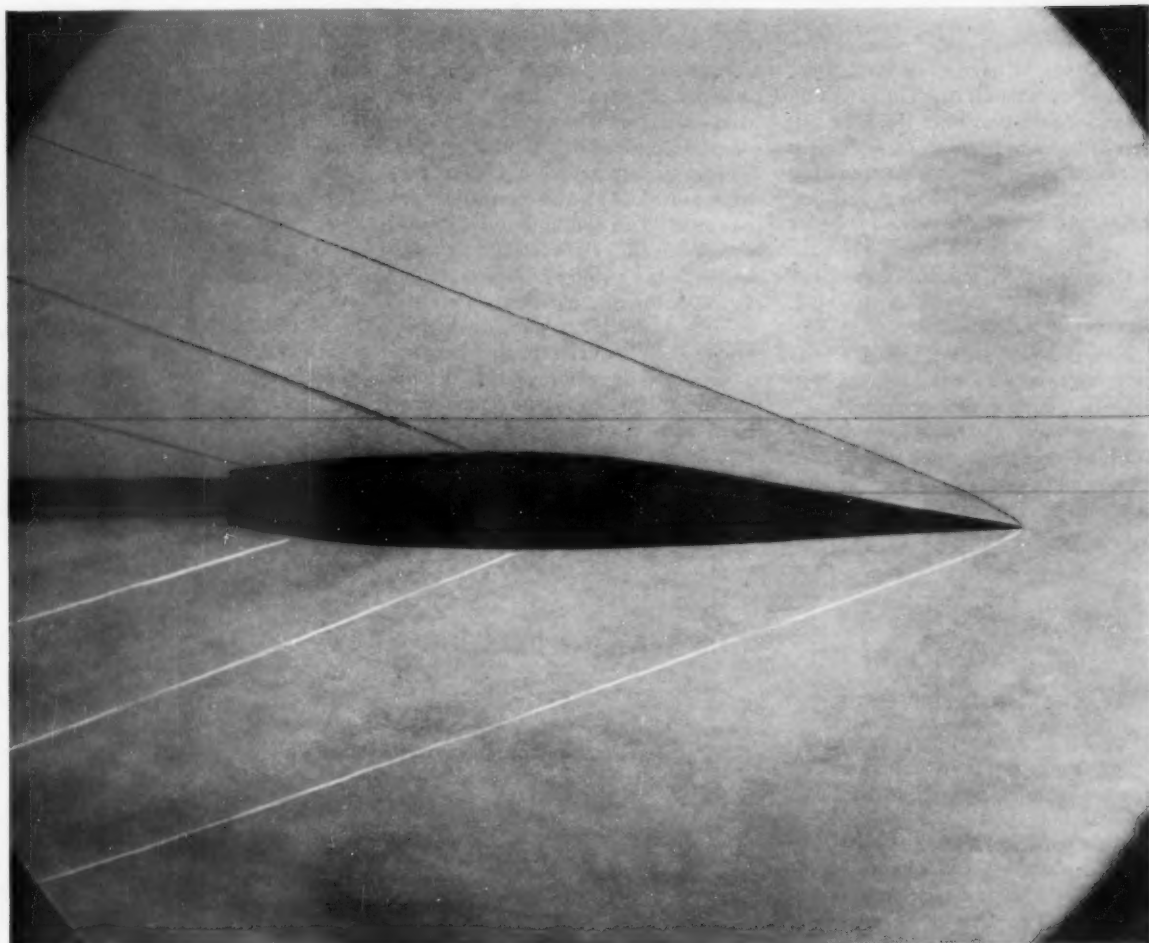
A testing program won't solve our present problems of inequitable promotions and the imbalance among certain MOSs. First, the man who is best in unit duties is not always the one who scores highest in a test; conversely, the man with the highest score is not always the best in his outfit. Secondly, we still face the problem of

overages in many of the more senior enlisted-grade MOSs, thus keeping closed the door to promotion for even the most capable men with those specialties. Thirdly, the program is just another means whereby a higher headquarters usurps the prerogatives of the company commander.

Today it is not uncommon to find a master sergeant or other senior enlisted rating filling the TOE or TD vacancy of an E-4 or lower, or even a fabricated job without authorization. This is not so surprising as the fact that many of these soldiers resist assignment to a slot requiring the abilities of their grade. The reason is that many such people are not qualified for jobs requiring their grades even though they had been promoted to that grade. At the

same time, we have lower-ranking non-commissioned officers, who have demonstrated their proficiency, occupying jobs with grade authorizations higher than those they hold. Promotions are slow and even at a standstill for soldiers who find themselves in an MOS in which there is an overage.

We have tables of organization and tables of distribution that authorize various duties within units. Let's use them when we assign people and prohibit their assignment to positions which authorize a grade lower than the one they hold. Soldiers who seek assignments to these positions, or are now in them, should be offered reassignment to jobs commensurate with their grades, or be allowed to accept reduction, without prejudice, to the



Schlieren photograph of supersonic flight patterns in wind tunnel.

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grade authorized for the position they fill. DA would have to be careful not to flood commands with overages in grades; requisitions from the field will have to be more accurate; more thought will have to be given to assignment to keep within the one PCS per year limitation. All this would make for better use of manpower. DA would also have to retain a certain number of grades at large for those people in training, transient or patient status.

Now that we have established a basis for promotion, who will do the promoting? We entrust our company commanders with thousands of dollars' worth of equipment, and the greater responsibility of training men so that they can survive through combat. We

cannot demand such responsibility without conferring authority upon the company commander, for the two go hand in hand. Therefore, I say the company commander should do the promoting. Machine-scored tests can never substitute for the commander on the scene. With this authority for promoting to all grades should go the authority for reducing. A few injustices might occur, but there is always recourse to the IG or the next higher commander. Reductions have become so involved in administrative details that many company commanders prefer to keep deadwood or await their eventual reassignment, rather than add to the heavy daily workload.

By returning to the company com-

mander his rightful authority for promoting and reducing, the Army should gain a more equitable promotion system, a lessening of the imbalance in certain MOS, and better use of its manpower. The results would be higher morale, a more qualified noncommissioned officer corps, and a higher reenlistment rate among the people we need.

Captain Thomas C. Clary, AGC, was an enlisted man and warrant officer before being integrated into the RA in 1953. Besides various assignments in his branch, he has been a platoon leader in the 33d Infantry, and is now an instructor in the Personnel Management Department, TAG School.

LT. CHARLES J. CHEVES, JR.

PRESTIGE, responsibility, privilege—these three words have tremendous meaning in the army. But their individual importance is relative. Prestige can be solid fact or hollow sham, depending upon what mixture of responsibility and privilege it is based upon. Privilege should be an afterthought, a minor complement to responsibility as a basis for prestige. No matter how many privileges, freedoms and liberties a leader may have, he will not gain respect and confidence, he will not attain real prestige unless he constantly seeks and accepts responsibility.

The Army has recognized the absence of noncommissioned officer prestige but corrective action has been based on erroneous premise. An engineer repairing a weakened structure reinforces the foundation and framework. Decorative exterior design is not his concern. The Army has taken the opposite attitude, attempting to rebuild noncommissioned officer prestige not by correcting the basic weakness, but by tacking on decorative privilege. Old privileges have been expanded and new ones invented. Homelike billets and complete pass freedom have given the bachelor noncommissioned officer all the privileges of a bachelor officer. It would seem that if unlimited privilege paves the way to prestige, our noncommissioned officers should be the most respected men in the Army. The

fact that they are *not* indicts the Army's approach to the problem. Pleasures are habit-forming, so our noncommissioned officers have accepted the offered privileges and are demanding more. The blame is not theirs alone. The Army has distorted the true relationship between prestige, privilege, and responsibility, almost ignoring the last of the three.

The Army's misguided prestige program threatens to decrease efficiency and waste experience. The idea now in vogue is that senior noncommissioned officers should be excused from those responsibilities which are tedious, repetitious, or perhaps a little boring. Certainly an experienced noncommissioned officer should not be subjected to instruction in basic subjects purely as a student. This does not call for excusing him completely from such training. No unit has so many perfectly trained soldiers that they cannot all be used as instructors, assistant instructors, or critical observers. Unfortunately, there are glaring indications that many sergeants are as needful of instruction in basic subjects as the privates they are supposed to lead.

The practice of excusing senior noncommissioned officers from duties has in some instances progressed to relieving them from leadership positions in the unit chain of command. This inexcusable waste of manpower and experience can only lead to lowered standards.

Major factors contributing to the lack of prestige are the ridiculously low standards required for promotion as concerns both time in grade and ability. Our noncommissioned officers can never attain group prestige so long as there are more than a handful of incompetents, disinterested specialists and illiterates among them. The Army, trying to increase reenlistments, has made it too easy to become a sergeant. Our brighter young soldiers, instead of reenlisting, take a horrified look at the products of rapid and ill-considered promotion and choose civilian life. Increased time-in-grade requirements and Army-wide promotion examinations would do more for noncommissioned officer prestige than all the privilege the Army can grant.

The solution seems relatively simple. Orient our noncommissioned officers on the true relationship between responsibility and prestige. Reduce or transfer to specialist ratings those who are unable or unwilling to seek and accept responsibility. Make promotions hard to get. Clean out the trash and give the good men responsibility. When this has been done, and not before, our noncommissioned officers will have real prestige.

Lieutenant Charles J. Cheves, Jr., Infantry, a 1953 graduate of USMA and of the Infantry School Basic Officers Course, is on duty at the U. S. Army Garrison, Camp Kobe, Japan.



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How's Your Radar?

Major Jack E. Vaughn

Today the United States Army is using more and more radar equipment. This equipment has followed the general pattern of development in becoming more reliable, compact and complex.

During the early days of radar electronics, special training produced technicians who knew how to operate, adjust and maintain radar equipment. As they gained knowledge through schooling and experience and as their units depended more and more on radar, their services came to be considered indispensable. The commander lacking a background in electronics had to rely on the question "How's your radar?" directed to the technician in order to insure himself of its battle readiness. He knew all there was to know about his unit's guns. Not so his radar.

If the commander attempted to school himself in radar electronics he was promptly presented with volumes of schematic diagrams, technical manuals and sympathy. Unless he was particularly aggressive and had plenty of spare time, the volumes collected dust and he reverted to his old formula of "How's your radar?" Periodically and with good intentions, he would inspect the radar, using the same system he used on the rest of his equipment. Was it clean? He could tell. Was it painted? He could tell. Were all the fittings lubricated? He could tell. As to whether the equipment would work, he could only ask the question, or assume that it would or would not, depending on the state of exterior paint or grease fittings.

Simple test equipment

Certain test equipment has been developed that will show exactly how the radar transmitter and receiver are performing. This test equipment is included as a TOE item in every unit using radar equipment. It is used by some good technicians to determine for themselves the answer to "How's your radar?" The commander can use it while making command inspections if he knows how and can interpret the results. He must rely on the technical ability of his radar mechanics, but still should be able to check results personally.

Major Jack E. Vaughn, Artillery, was commissioned from OCS in 1942 and served in the Southwest Pacific Area during World War II. He has been associated with AA radar for fourteen years and is now supervisor of the M33 Maintenance Branch, Gunnery and Matériel Department, Air Defense School.

When a radar is manufactured certain standards must be met as to the power radiated by the transmitter. Either it attains these standards or it is rejected. The receiver must also meet certain standards as to its ability to build up a small signal to such a degree that it can be seen above the noise or grass that is inherent in the equipment. If we know these standards we can, with our test equipment, use them to compare the radar's actual performance. This can be done easily by the radar technician. What is more important, it can be done as easily by the unit commander. The test equipment is available. Getting the unit commander to use it himself is difficult but not impossible. The test equipment is a signal generator with a built-in resonant cavity and attenuator. It has thirteen operating controls and three dials. The interior is a complex electronic circuit. The uninitiated are frightened by the exterior and terrified by the interior. The present-day standard automobile has over thirteen operating

Simple equipment is available to test complex radar performance. If an average housewife can use it, so can a unit commander.



controls and many more than three dials under surveillance or operation of the driver. All officers are capable of driving without fear, yet are dismayed by so-called complex test equipment.

Each test set comes with a complete book of instructions

which contains a chapter on set operation written in plain English with no intricate circuitry or complex terms. All the commander needs to do is to take the test set and the instructions and follow the step-by-step procedure to determine the performance of the radar. Everyone has followed written directions to successful accomplishments. Cake and martini recipes, dress patterns, and operations orders are all written instructions that have been followed. Cakes and dresses are mentioned because three Army wives with no electronics training were given the test equipment and operating instructions, and within a minimum of time arrived at the correct performance figure. It can be done; and, if a unit commander is to know the operational status of the equipment for which he is responsible, it *must* be done.

System performance

Radar receivers are designed to amplify a minute signal reflected from an aircraft until it is strong enough to show up on the oscilloscopes in the radar. If the signal is not

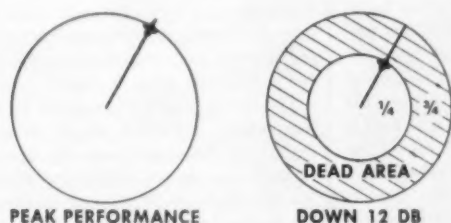


Figure 1: When twelve decibels are lost

strong enough originally it cannot be seen; if it is strong enough but not amplified sufficiently it will not be seen. Receivers and transmitters are designed and manufactured with a certain gain measured in decibels. A transmitter may have a power output of ninety decibels and its receiver a gain of one hundred decibels. By adding the two we have a system performance of 190 decibels. If the system performance is actually 190 decibels it is operating at peak performance and the radar is doing its job. If the over-all performance drops to 178 decibels there is a loss of twelve decibels which reduces the efficiency of the radar.

Performance loss

A loss in over-all performance may be due to many things. It is not up to the unit commander to know why there is a loss or to make the repairs or adjustments to the equipment to overcome this loss. It is not his job to know why the rifle is dirty or to clean it. It is his task to recognize that the rifle or radar is in need of maintenance.

How serious is a loss in over-all performance? A loss of only twelve decibels will result in a loss of half of the available range of a radar. If a radar were capable, when operating at peak performance, of just barely seeing a target at a hundred thousand yards and lost twelve decibels in over-all

performance, it would then be able to just see the target at only fifty thousand yards. From Figure 1, this means that three-fourths of the area under surveillance by the radar is lost to the just barely discernible target.

With the speed of modern aircraft, we must "see" them at the maximum range in order to engage them before they arrive at their target. The echo from these same aircraft is getting smaller due to streamlining, their altitudes, and the lack of propellers.

Why is a loss of twelve decibels not noticed immediately by the operator? Loss in over-all performance is normally a slow process. The day-to-day change is so small that operators do not notice it. As an example of this slow change, suppose you purchased a 1950 model radio when it came out and played it for seven years. Compare it now with an unused 1950 radio and you will find that the used radio sounds like a tin box in comparison. The change was progressive, but day-to-day changes were minute and unnoticed.

In a survey recently conducted, approximately a hundred different radar sets, each reported operating normally or better by the radar personnel concerned, were tested with reliable test equipment. On the average, these sets were down twelve decibels. As a matter of fact, sixty-nine of the sets—more than half the total tested—were down from ten to thirty-five decibels. I repeat that these radars were thought to be operating normally. These data are shown only to stress the importance of periodic performance measurements with proper test equipment.

Using calibrated test equipment, the unit commander can determine how the radar transmitter and receiver are performing. The results can easily be understood. A simple graph is used in the conversion. This graph (Figure 2) can be used with any Army radar equipment.

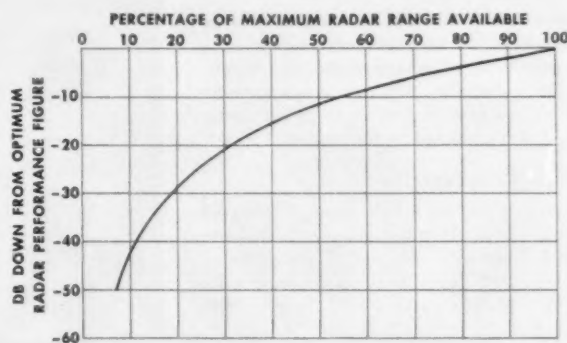


Figure 2: Radar performance versus radar range

If the over-all radar performance, both receiver and transmitter, is down seven decibels from its standards, then the instrument is operating on only seventy per cent of its available range.

When inspecting, don't ask your technician "How's your radar?" Find out for yourself.

Irons in the Fire

Sun Power for Satellite

U. S. Army Signal Corps engineers have demonstrated that solar cells can supply the electric power necessary to operate the instruments in an earth satellite. To prove their theory, the Army scientists attached glass-protected clusters of silicon wafer solar cells to the skin of an Aerobee-Hi rocket recently launched at White Sands. The rocket was fired to a height of 190 miles, approximating satellite conditions, and the solar batteries functioned perfectly, providing continuous electrical output from the time of the firing.

During the 60% of each circuit of the earth when the satellite is in the sunlight, the solar cells would provide instrument power and also would charge small nickel-cadmium batteries to supply electricity during the remaining 40% of the circuit, when the vehicle is traveling in the shadow of the earth. Signal Corps engineers claim that solar cells are particularly suited to this purpose because of their comparative light weight and long life. They do not wear out and if they remain undamaged, as long as they are exposed to direct or reflected sunlight, will convert it into electricity.

"Quadrotor" Research

The Army has awarded an \$89,000 contract to Convertawings, Inc., for engineering studies and research testing of the four-rotor helicopter concept. It is hoped that the use of four smaller rotors and simpler rotor hubs may lower the high initial cost and expensive maintenance of present single- and double-rotor helicopters. The new design provides for easier loading, better stability, and better and faster response to the controls.

Fast Photographs

A new portable radio facsimile set designed by the U. S. Army Signal Corps Laboratories at Ft. Monmouth, N. J., can put a high-quality photo print in the hands of a person miles away five minutes after the photographer takes the picture.

Said to be the fastest known means of transmitting pictures, the system can send vital military reconnaissance photographs by radio to command headquarters in time to affect critical decisions and perhaps change the course of a battle.

The facsimile equipment fits in the back of a radio-equipped jeep or car and can send successfully to a companion receiver forty miles away, or flash it thousands of miles

over standard telephone lines, or around the world on long-range radio circuits. It can also be mounted in a light plane or helicopter, allowing an aerial photographer to send surveillance pictures continually to battle headquarters direct from the air. In addition to the high-speed facsimile the system utilizes a camera equipped with a Polaroid Land Camera adapter, furnishing dry-finished prints in one minute.

"Scorpion" Probes Ballistics

In a joint Army-Air Force project an F-89C "Scorpion" aircraft fitted with a special gun nose is probing advanced ballistics for Army Ordnance at Eglin Air Force Base, Fla. The tests are expected to extend and refine ballistic theory, collecting data to insure that projectiles fired cross-wind from high speed aircraft will find their targets. At an altitude of 15,000 feet or higher a single projectile equipped with a self-destruction time fuze is fired downward from the F-89C toward the ballistics range of the base. It explodes at a predetermined time. Four ballistics cameras on the ground record the exact points of firing and explosion. A survey camera in the plane records the direction of fire, and radar equipment in the nose charts the projectile's velocity and trajectory and records any deflec-

tions. These data will be used to calculate final firing tables. The special gun nose was designed and manufactured by the Thieblot Aircraft Co. division of the Vitro Corp. of America.

Jet Vibration Monitor

Development by Sperry Gyroscope Co. of a simple electronic method for monitoring jet engines assures safer journeys for commercial jet passengers and greater mission reliability for military pilots.

The new equipment "routinely" picks out and measures selected vibrations within the inner recesses of jet power plants both on the ground and in flight. Compact, permanently installed airborne units will enable flight crews to precisely monitor engine performance and speedily spot impending trouble which, unnoticed, might result in disaster.

The system weighs from twelve to thirty-four pounds, depending on the number of engines on the aircraft and the amount of vibration data desired. Its heart is a sensitive pick-up which can be attached in any quantity or number of places to turbo-jet and turbo-prop engines. This device is said to be extremely rugged and dependable even though subjected continuously to temperatures of 500 degrees or minus 65 degrees Fahrenheit.



Convertawings' new experimental four-rotor helicopter during test flight



Test apparatus for Inertial Guidance gyros

Inertial Guidance

MIT scientists have developed a new guidance system capable of guiding any kind of plane, missile, ship or submarine to any chosen spot on earth, operating without magnetic compass, radio, radar, or celestial navigation aids or observations of any kind. The system, known as Inertial Guidance, needs no outside electronic signal or radar beam, and cannot be "jammed" by enemy interference. Its heart is a free-floating gyroscope, sealed in a four-inch cylinder the size of a tomato can, which remains aimed in a fixed position in relation to the universe, independent of the earth's motion, the weather, sunspots, or magnetic influences.

Components of the Inertial Guidance system are being manufactured by Sperry Gyroscope Co. and by the AC Spark Plug Division of General Motors.

New Type STOL

Kaman Aircraft is working on a new and different STOL concept. The aircraft, gas-turbine powered, would utilize two propulsive rotors with small control flaps buried in the trailing edges of the blades to provide cyclic and collective control by changing the lift characteristics. This will afford the pilot full control at air speeds of less than fifty miles per hour. Above that speed the rotor flaps automatically phase out and the conventional controls take over. Fowler flaps on the wing will provide additional lift during take-offs, landings, and slow speed flight.

Jet VTOL No Tail Sitter

Newest jet-powered VTOL airplane is Bell Aircraft Corporation's experimental X-14, which has successfully completed initial flight testing.

Powered by two British-made Armstrong-Siddely engines, the X-14 is designed to take off vertically in a conventional horizontal position, shift to forward flight and land vertically, without a runway. Thrust diverter

vanes located behind the engines direct the powerful jet blast toward the ground for take-off lift. In forward flight, the pilot re-directs the thrust toward the rear of the plane.

To substitute for conventional control surfaces, such as elevators, rudder and ailerons during hovering and at slow forward speeds, the X-14 is equipped with compressed air nozzles at wing tips and tail to provide necessary directional control.

The X-14 differs from the so-called "tail sitters" and other VTOL planes because it can operate without the help of special ground handling equipment.

Stud Hammer

Velocity Power Tool Co. is marketing a new piston-driven, powder-actuated stud hammer for safer and more economical fastening of wood or sheet metal to concrete. Weighing about six pounds, the hammer is highly portable. Impelled by a blank cartridge, the piston pushes rather than shoots the specially developed nail stud into the work surface, firmly anchoring the wood or sheet metal object to concrete.

HOT SPARKS

The Corps of Engineers R&D Laboratories have designed a lightweight, durable, pneumatic type assault boat. Constructed of neoprene-coated nylon, the craft has a maximum capacity of fifteen men, and can attain speeds of 7.1 miles per hour with a twenty-five-horsepower outboard motor, or 3.3 miles per hour by hand paddling.

The Navy and the Glenn L. Martin Co. have announced—the Bullpup—a new air-to-surface missile. It is being evaluated for use against targets from outside the effective range of enemy high-volume small-arms and automatic weapons fire.

A tank fighting-compartment simulator, an "automatic engineer" that will help to design tanks, is being developed for the Army by Lehigh Engineering Associates. The simulator is devised to reproduce the various forces which act upon the tank fighting compartment and on the gunner in it, giving immediate results and saving valuable design time and months of calculations.

A high-intensity noise system capable of simulating in-flight noises up to levels of 145 decibels has been developed by the Radio Corporation of America. The system makes possible quick, economical pre-flight laboratory tests of the survival capacity of electronic components and assemblies for jet aircraft and guided missiles.



XKD4R-1, Navy rocket drone

Navy Rocket Drones

The U. S. Navy is using its new rocket propelled target drones at Point Mugu, California. Developed and manufactured by Radioplane Co., the XKD4R-1 is small enough to be launched from the wing of a fighter aircraft, flies itself by means of a flight control package that incorporates all of the flight control equipment and control surfaces in a single, compact, removable unit. The plastic plane was designed primarily as a high-speed, high-altitude training target for air-to-air missile practice, but may also be used as a high-performance, economical target for the evaluation of rocket weapons.

New CBR Mask

A new Army mask affording protection against chemical, biological and radiological agents has been developed by the Chemical Corps. Designed with the assistance of the Mine Safety Appliances Co. of Pittsburgh, Pa., the mask lacks the protruding canister used in current models, substituting pads of a new lightweight, pliable, gas-aerosol filter material inclosed in cavities molded into the rubber facepiece. It has many advantages over types now in use, such as lower breathing resistance, better vision, clearer speech transmission and greater comfort.

CBR Protective Mask





ASSOCIATION OF THE U. S. ARMY

Aims and Objectives

The Association of the U. S. Army shall be an organization wherein all who are in accord with its objectives may join in the exchange of ideas and information on military matters, and in fostering, supporting, and advocating the legitimate and proper role of the Army of the United States and of all its elements, branches, and components and providing for and assuring the Nation's military security.

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Membership

General Membership. General membership in the Association shall be open to any individual who has been honorably discharged or retired from the Armed Forces of the United States, to members of the National Guard of the United States not on active duty, to members of the United States Army Reserve not on active duty, and to such persons as have held appointive office in the Department of the Army.

Service Membership. Service membership in the Association shall be open to all active-duty members of the Army of the United States.

Cadet Membership. Cadet membership in the Association shall be open to the cadets of the United States Military Academy and to all current enrollees in Junior, Military Schools, and Senior Divisions of the Army ROTC Program, including those units pro-

vided for by Section 55c of the National Defense Act as amended.

Associate Membership. Associate membership shall be open to active-duty personnel of the other services, to civilian employees of the Department of the Army not qualified for General Membership, and to any individual who supports the objectives of the Association and who meets such requirements as may be promulgated in regulations passed by the Council of Trustees.

Sustaining Membership. Sustaining membership shall be open to such industrial, commercial, business, professional, technical and veteran firms, corporations, organizations or societies that wish to support the aims and purposes of the Association, subject to specific approval by the Council of Trustees.

REPORT FROM YOUR AUSA CP

Resolutions to be screened by the Resolutions Committee for consideration of the Council prior to the Annual Meeting (28-30 October) must be received in National Headquarters in Washington by 28 September, 1957.

The 101st Airborne Division and the post of Fort Campbell, Kentucky, have boosted the number of Association members by approximately 1100. In the 101st about three-quarters of the officers and one-third of the top NCOs are now members. About 60 percent of the officers of the post and 28 percent of its top three graders are also members. A fine showing by a fine outfit.

We would appreciate being notified at once when a start is made in any area to organize a chapter. This enables us to assist in the formation of the chapter, to influence others to assist and to advise prospective members from the area. Such information will also help to prevent useless annoyance to those whom we are asking to initiate chapters. We are still far short of our goal of having at least one chapter in each state by our next Annual Meeting.

Now that our machine records operation is about current we will not extend credit beyond 60 days on memberships which have been started on a "bill me later" basis. Bills have been sent out to all members who have not paid their annual dues.

The Professional Group on Military Electronics of the Institute of Radio Engineers welcomes, as affiliates, members of the Association of the United States Army. This endorsement of this Association as a professional organization eliminates the necessity for the Board of the Institute of Radio Engineers to recognize the eligibility of individuals before the Military Electronics Group may accept them as affiliates. An affiliate will receive, upon payment of the assessment set by the Military Electronics Group, the publications issued

by that Group, and may attend Group meetings and conferences, and participate in other Group activities.

The Army Aviation Symposium (part of the program for our Sustaining Members) was held at Fort Rucker 5-7 June. Response to questionnaires indicates another success. Both Industry and the Army inform me that they are learning much from these symposiums. The next one (on electronics) will be held at Tucson, Arizona, and Fort Huachuca about 18-20 September.

As of 26 June we had 25 Sustaining Members. More than 50 other companies have requested information on this program.

A new brochure for prospective members is now available in a more convenient form and size.

The 775th Field Artillery Battalion at APO 751 sent a money order to cover the membership dues of 77 of their enlisted men. Such support from the enlisted personnel of this unit shows an awareness of the importance of the aims and objectives of this Association which is particularly gratifying to the Council. The battalion is extremely fortunate in having such far-sighted men in its organization.

The Staff and Faculty of the U. S. Army Chaplain School at Fort Slocum now report 100 percent membership in the Association. Congratulations and thanks for your support.

Major General Charles C. Haffner, Jr., retired, a member of the Publications Committee, has given our editorial staff some helpful comment on the editorial aims of *ARMY* magazine. While this is the first responsibility of the Publications Committee we invite all members to comment at any time on the content of the magazine.

WALTER L. WEIBLE

Lt. Gen., USA, Rtd.

Executive Vice President

AUSA REGIONAL ACTIVITIES

CHAPTERS

ALBUQUERQUE CHAPTER

Secretary: Lt. Col. James M. Keating, Rtd., P.O. Box 1689, Albuquerque, N. M. President: Col. Benjamin T. Rogers, Rtd.; First Vice President: Col. Charles K. Dillingham, Rtd.; Second Vice President: MSgt Vernon E. Kerr, USAR; Treasurer: Capt. Vance Mauney, USAR.

BROOKLYN CHAPTER

Secretary: Miss Irene De Martini, Office of the CG, U. S. Army Transportation Terminal Command, Atlantic, Brooklyn 50, New York. President: Maj. Gen. Evan M. Houseman; First Vice President: Brig. Gen. A. M. Willing; Second Vice President: Dr. Leo A. Lieberman; Treasurer: Mr. Bernard Hershey.

CALIFORNIA CENTRAL VALLEY CHAPTER

Secretary: Mr. Kenneth F. Neill, Information Officer; Sharpe Gen-

eral Depot, Lathrop, California. President: Brig. Gen. D. S. McConaughy, USA-Rtd.; First Vice President: Colonel Robert S. Quick; Second Vice President: Col. Wyan Thiessen, USA-Rtd.; Treasurer: Mr. Carroll G. Grunsky.

COLUMBUS-PHENIX CITY-FORT BENNING CHAPTER

Secretary: Col. S. S. Sogard, Adjutant General's Section, Fort Benning, Ga. President: Mr. T. G. Reeves; First Vice President: Mr. J. W. Woodruff, Jr.; Second Vice President: Lt. Gen. Manton S. Eddy, Rtd.; Treasurer: Lt. Col. Edward D. Fitzpatrick.

Name changed from Columbus-Fort Benning Chapter to Columbus-Phenix City-Fort Benning Chapter at meeting held 23 May 1957. New charter has been issued to reflect change in name.

THE COOK COUNTY CHAPTER

Secretary: Col. Jules V. Houghtaling, USAR-Rtd., 1787 Clifton Ave., Highland Park, Ill. President: Gen. Robert E. Wood, USA-Rtd.; First Vice President: Brig. Gen. Lawrence Whiting, USAR-Rtd.; Second Vice President: Brig. Gen. Otto Kerner, USAR-Rtd.; Third

Vice President: Col. Walter L. Furburshaw, USAR-Rtd.; *Fourth Vice President:* Col. Joseph Triner; *Treasurer:* Lt. Col. O. C. Tyler, USAR; *Asst. Secretary:* Lt. Col. Herbert Moselle, USAR.

DALLAS CHAPTER

Secretary: Lt. Col. John L. Briggs, Southland Insurance Company, Dallas, Texas. *President:* Col. William B. Ruggles, USAR-Rtd.; *First Vice President:* Mr. Harold F. Volk; *Second Vice President:* Mr. N. J. DeSanders, Jr.; *Treasurer:* Mr. Lloyd S. Bowles.

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Secretary-Treasurer: Lt. Col. Clyde Putnam, USAR, 720 Des Moines Bldg., Des Moines, Iowa. *President:* Col. Harold E. Pride; *First Vice President:* Lt. Col. Willard Hayne; *Second Vice President:* Lt. Col. William Leachman.

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Secretary: Mr. Harold J. Miller, Hq Ord Tank-Automotive Command, 1501 Beard, Detroit 9, Michigan. *President:* Maj. Gen. Gordon A. MacDonald, NGUS; *First Vice President:* Col. T. S. Cawthorne, USAR; *Second Vice President:* Mr. Clifford O. May; *Treasurer:* Col. Robert Bruce.

EAST BAY CHAPTER

Secretary: Col. Earl W. Hunting, USAR, Insurance Securities Inc., 2030 Franklin Street, Oakland 12, California. *President:* Mr. Edwin



NEW YORK, N. Y. Col. George A. Duerr, G3, USA Military District, NY, presents the Charter of the University Heights ROTC Company, at New York University, to Cadet Anthony Lauria, Jr., Company Commander, as Col. Dan C. Russell, PMST, looks on

WEST DE PERE, WIS. Charter ceremony of the St. Norbert College Company. Left to right: Maj. Joseph F. H. Cutrona, PMST; Cadet John Witting, Company Commander; Cadet Ralph Hallada, First Lieutenant; the Very Rev. D. M. Burke, President of St. Norbert College



Meese, Jr.; *First Vice President:* Maj. Gen. William F. Dean, USA-Rtd.; *Second Vice President:* Major Paul Reed; *Treasurer:* Lt. Col. John A. Dutro, USAR.

EL PASO CHAPTER

Secretary: Mr. C. William Wakefield, P.O. Box 193, El Paso, Tex. *President:* Dr. Hervey W. Dietrich; *First Vice President:* Mr. Richard W. MacCarthy; *Second Vice President:* Mr. L. T. Vice; *Treasurer:* Mr. George E. Rawson.

FORT DEVENS CHAPTER

Secretary: Capt. R. S. Moriarty, 4th RCT, Fort Devens, Mass. *President:* Col. Fred L. Walker; *First Vice President:* Lt. Col. Robert C. Harris; *Second Vice President:* Maj. Glenn N. Mayo; *Treasurer:* Major Margot Reis.

FORT HOOD CHAPTER

Secretary: MSgt Maurice N. Madison, G4 Section, Bldg. 2225, Fort Hood, Tex. *President:* Brig. Gen. Roland H. del Mar; *First Vice President:* Col. W. G. Merriam; *Second Vice President:* Col. J. F. Delaney, Jr.; *Treasurer:* Capt. M. M. Gentry.

FORT LEONARD WOOD CHAPTER

Secretary: Lt. Col. George A. Rigely, Building 401, Fort Leonard Wood, Mo. *President:* Maj. Gen. William C. Baker, Jr.; *First Vice President:* Mr. Dru Pippin; *Second Vice President:* Col. George A. Meidling; *Treasurer:* Lt. John W. Shannon; *Asst. Secy-Treas:* MSgt. Charles B. Ing.

Mr. Dru Pippin, First Vice President, presented AUSA ROTC medals to outstanding cadets at University of Missouri at ceremonies 22 May, as representative of Council of Trustees of the national headquarters.

FORT RILEY-CENTRAL KANSAS CHAPTER

Recording Secretary: MSgt George E. Bales, Room 114, Patton Hall, Fort Riley, Kansas. *President:* Mr. John D. Montgomery; *First Vice President:* Mr. Ralph Wareham; *Second Vice President:* Mr. Charles S. Arthur; *Executive Secretary:* Mr. Blair D. Adam; *Treasurer:* Mr. Ed J. Rolfs, Jr.

Meeting 22 June changed name of chapter to above, to indicate widening interest among civilian population of surrounding territory. Barbecue and other attractions drew more than 1,000 persons to meeting, held at Fort Riley.

FORT SHERIDAN CHAPTER

Secretary: MSgt James L. Norris, Fort Sheridan, Ill. *President:* Lt. Col. Warren J. King; *First Vice President:* Maj. Dale E. Williams; *Second Vice President:* Mr. Donald Y. McKay; *Treasurer:* Major I. M. Henry, WAC.

FRANKFORD ARSENAL CHAPTER

Secretary: Mr. Reuben Levine, Frankford Arsenal, Philadelphia 37, Pa. *President:* Dr. William J. Kroeger; *First Vice President:* Mr. Harry F. Devlin; *Second Vice President:* Mr. George S. VanDyke, Jr.; *Treasurer:* Mr. Kenneth E. Yocum.

Quarterly meeting 27 May featured talk to 450 members and guests by Lt. Gen. Lewis B. Hershey. Guests included Philadelphia's military, ecclesiastical, industrial and business leaders.

GARRY OWEN CHAPTER

Secretary: Capt. Harry W. Rollins, Hq 7th Cavalry Regt., APO 201, San Francisco, California. *President:* Lt. Col. William T. Rogers; *First Vice President:* Major Bruce S. Eldridge; *Second Vice President:* Capt. James T. Cecka; *Treasurer:* 1st Lt. Ronald R. Berkey.

GENERAL JOHN J. PERSHING CHAPTER

Treasurer: Lt. Col. Harland L. Dodge, c/o Comptroller Section, Hq First U. S. Army, Governors Island, New York. *President:* Col. Sidney G. Brown, Jr.; *First Vice President:* Col. Harry C. Keeney; *Second Vice President:* MSgt John A. Butler; *Secretary:* Major George I. Stoekert; *Legal Officer:* 1st Lieutenant Sheldon Cohen.

HAWAII CHAPTER

Secretary: Major Charles D. Flinn, Hq. U. S. Army Pacific, APO 958, San Francisco, California. *President:* Lt. Gen. Henry S. Aurand, USA-Rtd.; *First Vice President:* Brig. Gen. Kendall J. Fielder, USA-Rtd.; *Second Vice President:* Maj. Gen. Fred W. Makinney, NGUS; *Third Vice President:* Col. Percy H. Johnston, USAR; *Treasurer:* Capt. Kenneth Y. H. Ahana.

Mr. Don Belding, member of the Council of Trustees of AUSA, was principal speaker at Chapter meeting 27 June at Fort Shafter theater. Mr. Belding spoke on the Army's place in the missile picture. Slate of permanent officers, listed above, installed at this meeting.

HEADQUARTERS SEVENTH U. S. ARMY CHAPTER

President: Major Gen. John C. Oakes, Hq Seventh U. S. Army, APO 46, New York, N. Y.; *Honorary President:* Lt. Gen. Bruce C. Clarke; *First Vice President:* Col. Robert H. Cole; *Second Vice President:* Lt. Col. William O. Quirey; *Secretary:* Major Thomas A. Gandy, Jr.; *Treasurer:* Major Andrew C. Anderson.

Geographical area: that occupied by Headquarters Seventh U. S. Army, APO 46.

HEIDELBERG CHAPTER

Secretary: Capt. A. L. Shoaff, Hq USAREUR, APO 403, New York, New York. *President:* Major Gen. G. E. Martin; *First Vice President:* Col. K. E. Adamson; *Second Vice President:* Col. S. E. Otto; *Treasurer:* Major W. H. Brandenburg.

HENRY LEAVENWORTH CHAPTER

Secretary: Maj. John H. Cushman, Fort Leavenworth, Kans. *President:* Mr. Harold A. Purdy; *First Vice President:* Mr. John W. Breidenthal; *Second Vice President:* Col. John H. Hay; *Treasurer:* Mr. George H. Ryan.

INDIANA CHAPTER

Treasurer: Major Alfred F. Ahner, Room 212 State House, Indianapolis, Indiana. *President:* Brig. Gen. Wendell C. Phillippi, NGUS; *First Vice President:* Col. John C. Carvey; *Second Vice President:* Brig. Gen. John W. McConnell; *Secretary:* Col. Harsel Harris.

KELLEY BARRACKS CHAPTER

Secretary: Lt. Col. Henry T. Agee, Hq VII Corps, APO 107, New York, N. Y. *Honorary President:* Lt. Gen. John F. Uncles; *President:* Brig. Gen. Charles E. Beauchamp; *First Vice President:* Col. William B. Kunzig; *Second Vice President:* Col. Edson D. Raff; *Treasurer:* CWO-2 Alfred J. Buza.

KENTUCKIANA CHAPTER

Secretary: Capt. John C. Burney, General Delivery, Fort Knox, Kentucky. *President:* Col. George M. Chescheir, Rtd.; *First Vice President:* Maj. Gen. Paul A. Disney; *Second Vice President:* Lt. Col. Julio Chiamonte; *Treasurer:* Capt. Wilbur T. Whitehead; *Asst. Secretary:* MSgt Robert J. McDonald.

LAWTON-FORT SILL CHAPTER

Secretary: Maj. Rawlins M. Morris, P. O. Box 84, Lawton, Okla. *President:* Mr. George Page; *First Vice President:* Mr. Milton Worley; *Second Vice President:* Mr. Floyd Zook; *Treasurer:* Brig. Gen. John F. Bird, Rtd.

MILWAUKEE CHAPTER

Secretary: Mr. George Comte, c/o The Wisconsin Military District, Federal Post Office Building, Milwaukee, Wisconsin. *President:* Brig. Gen. Don E. Carleton; *First Vice President:* Mr. G. M. Taylor; *Second Vice President:* Lt. Col. Roth S. Schleck; *Treasurer:* Maj. Frank X. Mages.

MONTEREY COUNTY CHAPTER

Secretary: Mr. Richard Bennett, Pebble Beach, California. *President:* Col. Allen Griffin, AUS-Rtd.; *First Vice President:* Mr. Joseph Juri; *Second Vice President:* Maj. Gen. Robert B. McClure, Rtd.; *Treasurer:* Col. Frank A. Heywood.



HAWAII. Don Belding (right), a trustee of AUSA, presents the Charter of the Hawaii Chapter to its newly elected President, Lt. Gen. Henry S. Aurand, USA, Ret. In center is Lt. Gen. Blackshear M. Bryan, then CG, USARPAC, now commanding First U. S. Army

SAN FRANCISCO, CAL. AUSA's San Francisco Chapter receives its charter on 29 May 1957. Left to right are Lt. Gen. Robert N. Young, Commanding General, Sixth U. S. Army; Frank E. Marsh; William M. McNabb, Second Vice President; Frederick M. Fisk, President; and Albert Leslie, Treasurer



MOTHER LODGE CHAPTER

Secretary-Treasurer: Lt. Col. William L. Shaw, NGUS, 3701 College Ave., Sacramento, Calif. *President:* Brig. Gen. A. M. Shearer, Rtd.; *First Vice President:* Mr. E. A. Combatalade; *Second Vice President:* Mr. George E. Holt.

NEW ORLEANS CHAPTER

Secretary: Mr. Louis Robillia, Jr., Deputy Director of Plans and Programs, U. S. Army Transportation Terminal Command, Gulf, New Orleans, Louisiana. *President:* Mr. Wallace M. Davis; *First Vice President:* Col. Donald E. MacDonald, USAR-Rtd.; *Second Vice President:* Brig. Gen. Robert V. Maraist, USA-Rtd.; *Third Vice President:* Mr. Jonas C. Sportl; *Treasurer:* Mr. Newton D. McLean.

Charter meeting 24 June; Lt. Gen. C. D. Eddleman, DCS/Operations, Department of the Army, principal speaker. Brig. Gen. Norman H. Vissering, Commanding General, U. S. Army Transportation Terminal Command, Gulf, was Master of Ceremonies. Brig. Gen. de Lesseps S. Morrison, Mayor of New Orleans, proclaimed the day as New Orleans Chapter, AUSA, Day. Ceremony had wide newspaper coverage. Above slate of officers was elected at the meeting.

NEW YORK CHAPTER

President: Lt. Colonel Charles I. Katz, USAR, 250 West 57th Street, New York 19, New York. *First Vice President:* Col. Arthur D. Hirt, USAR; *Second Vice President:* Lt. Col. Pelham St. George Bissell, III, USAR; *Secretary:* Major Emilie L. Berkley, USAR; *Treasurer:* Lt. Col. Lloyd W. Stearns, USAR.

PIKES PEAK CHAPTER

Secretary: Lt. Col. Frank A. Golbey, USA-Rtd., P.O. Box 2442, Colorado Springs, Colorado. *President:* Lt. Col. J. D. Ackerman, USAR; *Executive Vice President:* Major Gen. William H. Gill, USA-Rtd.; *Vice President for Membership:* Mr. George S. Winters; *Vice President for Programs:* Mr. Samuel T. Jones, Jr.; *Treasurer:* Major H. C. Fleming, Jr., USAR.

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SAN BERNARDINO COUNTY CHAPTER

First Vice President: Lt. Col. David D. Fleming, Comptroller Section, U. S. Army Garrison (6019-01), Camp Irwin, Calif. *President:* Col. James W. Bidwell; *Secretary:* MSgt Claire Hunt; *Treasurer:* SFC Gerald Morgan.

Name changed from Camp Irwin Chapter at meeting held 10 June 1957. Change in name reflects increased interest by civilians in area.

SAN FRANCISCO CHAPTER

Secretary: Col. C. C. W. Allan, Office of the Deputy Chief of Staff, Hq Sixth U. S. Army, Presidio of San Francisco, California. *President:* Mr. Frederick M. Fisk; *First Vice President:* Lt. Gen. Claude B. Ferenbaugh, USA-Rtd.; *Second Vice President:* Mr. William M. McNabb; *Treasurer:* Mr. Albert Leslie.

Charter dinner meeting held 29 May at Presidio of San Francisco Officers Open Mess. Mr. Fisk pledged chapter and himself to further aims of AUSA; Lt. Gen. Robert N. Young, in closing address, stated that he did not expect to see Army's part in future wars diminished.

SEATTLE CHAPTER

Chairman pro tem: Mr. Joseph A. Sweeney, 917 Arctic Bldg., Seattle 4, Washington; *Secretary pro tem:* Col. Hal Randall.

ROTC MEDAL AWARDS

AUSA ROTC Medals have been awarded to the following cadets through 30 June 1957

Carnegie Institute of Technology . . . Cadet Capt. John K. Burchard
Clemson Agricultural College Cadet Major Daniel D. Lee, Jr.
Clemson Agricultural College Cadet Capt. James H. Jones
Clemson Agricultural College Cadet Major Joseph S. Taylor
Loyola College Cadet 2d Lt. Edward J. Balda
Michigan College of Mining and Tech., Cadet MSgt Barry Rought
North Dakota Agricultural College Cadet Donald Schiefer
Providence College Cadet Denis J. Dooley
University of Minnesota Cadet MSgt Ross E. Judkins
University of Minnesota Cadet Lt. Col. Burton L. Wyss
University of Missouri Cadet Vincent E. Hovley
University of Missouri Cadet Roger L. Pape
University of Toledo Cadet Capt. Paul M. Driscoll
West Virginia University Cadet MSgt James John Vasoti

SOUTHEASTERN NEW MEXICO CHAPTER

Secretary: PFC William I. Anderson, Office of the Unit Advisor (USAR), Municipal Airport Building, Roswell, New Mexico. *President:* Lt. Col. Thomas B. Stapp, USAR; *First Vice President:* Lt. Col. James B. Stapp; *Second Vice President:* 1st Lt. Burl J. Wilkerson; *Treasurer:* Capt. Maurice P. Hinman.

Geographical area: counties of Chaves, Eddy, Lincoln, Lea, Roosevelt, and Curry in New Mexico.

WASHINGTON STATE CHAPTER NO. 1

Secretary: Lt. Col. John A. Spencer, Fort Lewis Exchange, Fort Lewis, Washington. *President:* Col. James Stack, USA-Rtd.; *First Vice President:* Mr. Harry L. Minor; *Second Vice President:* Mr. Fred Osmer; *Treasurer:* Mr. Carl Phillips.

Meeting 16 June honored Mr. Frank Baker, publisher of Tacoma News Tribune, and person largely responsible for acquisition of land for Fort Lewis. Lt. Gen. Robert N. Young also attended meeting. Committees appointed, and purposes of Association explained to new members.

WOLTERS CHAPTER

Corresponding Secretary: Capt. John J. Peterson, Office of the Provost Marshal, Camp Wolters, Tex. *President:* Mr. Fred Brown; *First Vice President:* Mr. Harry Hopkins; *Second Vice President:* Mr. Orval W. Shore; *Third Vice President:* Col. John L. Inskeep; *Recording Secretary:* Mr. Malcolm Maupin; *Treasurer:* Mr. I. R. Preston.

ROTC COMPANIES

CANISIUS COLLEGE COMPANY

Canisius College, Buffalo, New York

Captain: Cadet Daniel T. Kirst; *First Lieutenant:* Cadet Thomas R. Block; *Second Lieutenant:* Cadet Joseph S. DePaolo; *First Sergeant:* Cadet Daniel W. Sullivan.

CITADEL COMPANY

The Citadel, Charleston, S. C.

Captain: Cadet Edwin C. King; *First Lieutenant:* Cadet Terry D. Cordell; *Second Lieutenant:* Cadet Charles M. Watson, Jr.; *First Sergeant:* Cadet Jimmie E. Jones, Jr.

CLARKSON COMPANY

Clarkson College of Technology, Potsdam, New York

Captain: Cadet Donald Broadhurst; *First Lieutenant:* Cadet Robert F. Koenig; *Second Lieutenant:* Cadet Charles Fish; *First Sergeant:* Cadet Sigmund Mierzwa.

DAKOTA COMPANY

North Dakota Agricultural College, Fargo, N. D.

Captain: Cadet Arnold Ellingson; *First Lieutenant:* Cadet Neal R. Bjornson; *Second Lieutenant:* Cadet Melvin G. Werth; *Social Chairman:* Cadet Curtis L. Stromstad; *First Sergeant:* Cadet W. Dale Ruff.

DICKINSON COLLEGE COMPANY

Dickinson College, Carlisle, Pa.

Captain: Cadet Wilbur M. Otto; *First Lieutenant:* Cadet Fred Conrad; *Second Lieutenant:* Cadet William Rogers; *First Sergeant:* Cadet Dick Schafer; *PIO Sergeant:* Cadet William Black.

DUQUESNE UNIVERSITY COMPANY

Duquesne University, Pittsburgh 19, Pa.

Captain: Cadet James King; *First Lieutenant:* Cadet John Vensel; *Second Lieutenant:* Cadet John Sullivan; *First Sergeant:* Cadet Alfred Eisenacher.

EDMUND R. WALKER COMPANY

University of Connecticut, Storrs, Conn.

Captain: Cadet Francis E. Dion, Jr.; *First Lieutenant:* Cadet Liudas Bajorinas; *Second Lieutenant:* Cadet Howard M. Belinsky; *First Sergeant:* Cadet Edward H. Soderberg.

ILLINI COMPANY

University of Illinois, Champaign, Illinois

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CAMP MCCOY, WIS. Officers of the McCoy-Red Cloud Chapter at its organization meeting. Left to right are Stewart Latimer of Sparta, Treasurer; Don Harris of Tomah, First Vice President; Fred Rahr of Sparta, President; John Kaehler of Bangor, Second Vice President; and Robert Ninneman of Tomah, Secretary

J. Hallada; *Second Lieutenant:* Cadet Robert E. Jossart; *First Sergeant:* Cadet James J. Reilley.

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THE MONTH'S BOOKS

Learning the Hard Way

UNITED STATES ARMY IN WORLD WAR II: The Technical Services. The Signal Corps: The Test (December 1941 to July 1943)

By George Raynor Thompson, Dixie R. Harris, Pauline M. Oakes, and Dulaney Terrett
Office of the Chief of Military History, 1957
621 Pages; Illustrated; Index; \$4.50

Reviewed by

HAROLD SILVERSTEIN, who is a Special Assistant to the Chief Signal Officer, Department of the Army.

The Test is the second of three volumes on the history of the Army Signal Corps in World War II. It opens dramatically with a singular test of a new Army capability, the early warning radar SCR-270, located at Hawaii, against an incoming flight of Japanese bombers. The radar and the crew rise to the occasion, but command appreciation fails the test. The volume closes dramatically eighteen months later on another test of command appreciation: that of the over-all role and organization of signal communications in the War Department. Between these two test parameters, the authors effectively portray the performance of communications and commanders, providers and users, against the ultimate test of war.

The Test provides a balanced treatment of development, supply and training activities with communications operations and support of combat. Inescapably, equipment characteristics and problems keep creeping into virtually all chapters, even to the extent—in some cases like radar—of becoming somewhat redundant.

The authors do a fine job in re-creating the sense of urgency and the deluge of critical problems that simultaneously hit the Signal Corps. Many bold and sweeping decisions had to be made on freezing design, initiating and expediting procurement, and solving production problems for a vast array of new and complex communications and electronic devices. The chapters "The First Billion Dollar Signal Corps" and "Signal Equipment" describe the incredible achievements that were made in development and matériel. When these achievements are related against the background of a communications and electronics industry that was required to jump from infancy to full manhood in a few short years, the reader cannot help but appreciate the latent strength and the quick reaction capability of this nation when its survival is put to test.

The flexibility of Signal Corps management and its willingness to depart from custom are typified by its contract with the Wallace and Clark Company for management engineering services and the use of advisory councils, particularly on production matters.

The chapters on the "First Months of the War Overseas," "The Test at Issue in North Africa," "Alaska Communications," and "Global Communications" give the reader a grasp of communications operations from the forward element in combat to the strategic services of the world-wide Army Command and Administrative Network. At all echelons, users and communicators were learning the hard way but always learning and improving, gaining competence and confidence. Training manuals and maneuvers in the States only provided the point of departure. The Northwest African Campaign turned out to be the real communications proving ground for commanders and signal personnel and equipment.

Problems of organization and jurisdiction continually beset the Signal Corps in this period, particularly at the War Department level. In contrast, the combat commanders handled their signal organization without much difficulty, even at the joint and combined commands. The organization of the War Department into three forces—the Army Air, Ground and Service—intensified the Signal Corps organizational dilemma. The AAF, with keen appreciation of communications and eyes always on a long-range autonomous objective, would never be satisfied with anything less than self-sufficiency. The Army Service Forces, struggling to establish itself and very sensitive to basic organizational challenges that the Signal Corps seemed to pose, belabored the Corps continually. At the General Staff and War Department level, there were elements sympathetic to the Signal Corps, but more pervading was a sense of irritation over this organizational maverick. Readers cannot help but recall the popular Pentagon slogan in World War II: "The enemy is across the hall." Finally, the issue erupted in the spring of 1943. Without regard to the problem, the merits of the Signal Corps case, or the over-all performance of the Signal Corps, the issue was resolved by "firing" the Chief Signal Officer through forced retirement.

Development and supply were the most critical internal organizational problems which had faced the Chief Signal Officer, General Olmstead, in this period. The authors intimate that his decision to combine development and supply under single direction, particularly under the control of development-minded General Roger B. Colton, was unfortunate, and subsequently—under Major General Ingles, the succeeding Chief Signal Officer—changed. It appears that an equally good case could be developed for the soundness of this marriage in the critical period when a multitude of communication and electronic devices had to be brought quickly out of development into initial procurement and production. The Korean emergency brought out the same problem. It was handled, in the opinion of this reviewer, by bringing the Chief and Deputy Chief Signal Officers into the act of resolving the inherent conflicts between the developer and the buyer and making many of the critical decisions in their own office.

This reviewer has only one major complaint about *The Test*. It takes much too long to put such a valuable documentary in the hands of personnel who have been coping with identical communications problems since World War II.

New Life of Old Jack

MIGHTY STONEWALL

By Frank E. Vandiver

McGraw-Hill Book Company, 1957

658 Pages; Illustrated; Maps; Index; \$6.50

Reviewed by

MAJ. GEN. HAROLD W. BLAKELEY, USA, Retired, who had long service in the Field Artillery and commanded the 4th Infantry Division in ETO.

When, in 1953, Douglas Southall Freeman encouraged Dr. Vandiver to start writing this life of Lieutenant General Thomas Jonathan Jackson, Dr. Vandiver asked himself, "What could be done to add to Henderson's splendid study and to Freeman's penetrating reappraisal of Jackson's military operations in *Lee's Lieutenants*?"

The answer, as revealed in this book, is that much could be done to clarify the confusing pictures of Jackson's complex and unusual personality, but that relatively little could be added to the accounts and analyses of his military operations.

The author is one of the younger Civil War specialists and is currently Associate Professor in History at Rice Institute. His older fellow historians, incidentally, give this volume high praise. Bruce Catton calls it a real addition to the history of the Civil War, and T. Harry Williams says, "It is the definitive life of Jackson."

For the military reader, interested primarily in estimates of situations, decisions, plans, orders, and execution and supervision of an operation, the carrying along concurrently of the story of Jackson's health, religious interests, and family life is not helpful. It is also true that the author is often not quite at home in the military idiom—which of course may be a good thing from the viewpoint of the civilian reader.

Few things in Jackson's military career have been the subject of so much discussion as his slowness and lack of drive during the Seven Days of the Peninsular Campaign. Steele, in his *American Campaigns*, says of the Confederates' good plans and poor execution that "the chief blame rests upon Stonewall Jackson." Dr. Vandiver brings up a new point in this connection. He attributes Jackson's inaction at Grapevine Bridge to a message from Stuart transmitting an order from Lee directing that Jackson's troops must stay where they were until Lee released them. In a note, the author says: "The Stuart dispatch has curiously escaped notice. Its great importance in explaining Jackson's delay at the Grapevine Bridge can hardly be exaggerated. Had Freeman known of this dispatch he doubtless would have recast his narrative." Vandiver's overall explanation of Stonewall's uncharacteristic conduct during this period is that, "Worked beyond the limit of even his iron endurance, Jackson did not realize that he had lost contact with reality."

Two of Jackson's attributes stand out throughout this account. One is what the author calls "his grinding attention to the fine points of discipline." The other is his effective use of artillery. Then always there was his loyalty to Lee who paid him the perfect tribute: "I have but to show him my design, and I know that if it can be done it will be done. No need for me to send or watch him. Straight as the needle to the pole he advances to the execution of my purpose."

Yugoslav Communism

NATIONAL COMMUNISM AND SOVIET STRATEGY

By D. A. Tomasic
Public Affairs Press, 1957
222 Pages; \$4.50

Reviewed by

STEFAN T. POSSONY, Professor of International Politics at Georgetown University and author of several books on military subjects.

On the basis of outstanding and new

Selected Check List of the Month's Books

This run-down of some of the books received for review during the month preceding our deadline is to give our readers who like to follow current literature a monthly check list of the most important, useful and potentially popular books. Full reviews of some of these books will appear in this or subsequent issues. Any of these titles may be purchased through the Combat Forces Book Service. See page 72 for order coupon and a complete listing of Selected Books for Military Readers.

THE HOLSTEIN DIARIES. Edited by Norman Rich and M. H. Fisher. Cambridge University Press, 1957. 404 Pages; Index; \$8.50. The second volume of the papers of an important official of the German foreign ministry in the 1880s, during Bismarck's time. Source data for rather specialized historians.

THE HUNGARIAN REVOLUTION. Edited by Melvin J. Lasky. Frederick A. Praeger, Inc., 1957. 318 Pages; Illustrated; \$5.00. A day-by-day account, from varied sources including documents, eyewitness accounts, and dispatches from both sides of the Iron Curtain, of the revolt that shocked the world, and that may yet prove to be the downfall of world communism. Dispassionate but stirring; a study in the substance of Soviet desires for peace and democracy.

NEGRO MILITIA AND RECONSTRUCTION. By Otis A. Singletary. University of Texas Press, 1957. 181 Pages; Index; Illustrated; \$3.75. The story of the ill-fated use of Negro militia during Southern Reconstruction following the Civil War.

RASCALS IN PARADISE: True Tales of High Adventure in the South Pacific. By James A. Michener and A. Grove Day. Random House, 1957. 374 Pages; Index; \$4.75. The Michener touch brings alive ten more tales of the South Pacific. "True tales of high adventure" [says the jacket copy] and there is some good light reading here, of screwballs and cutthroats. For those who still have a yen for the lure of the tropics.

THE RETURN OF GUNNER ASCH. By Hans Helmut Kirst. Little, Brown & Company, 1957. 310 Pages; \$3.95. In this last novel of the trilogy, Asch is now a lieutenant. He is harder, more mature, but has learned to roll with the system rather than fight it—until a Nazi colonel sacrifices a small force in the last days of the war for personal safety and gain. Asch becomes a merciless man-hunter; no longer the whimsical recruit. The author finds the Americans military amateurs.

THE S.S.: Alibi of a Nation, 1922-1945. By Gerald Reitlinger. The Viking Press,

1957. 502 Pages; Illustrated; Index; \$6.50. A thoroughly documented work of research, which indicates not only that Hitler's SS was a huge, varied and complex enterprise, but that there were few Germans who were not aware of its more disgusting ramifications. A striking object lesson in how not to run a government.

SECRET SERVANTS: A History of Japanese Espionage. By Ronald Seth. Farrar, Straus & Cudahy, 1957. 278 Pages; \$4.00. Good light reading for those who like their spy stories with a touch of the melodramatic. Hardly a text for the budding intelligence specialist—rather a cross between good fiction writing and some tidbits about how the Japanese spent much intelligence effort for comparatively little return. Two American traitors are mentioned.

A SHORT HISTORY OF THE FAR EAST. By Kenneth Scott Latourette. The Macmillan Company, 1957. 754 Pages; Index; \$8.00. A new edition of what is considered a standard work; previous editions appeared in 1946 and 1951.

THE STORY OF THE CONFEDERACY. By Col. Robert S. Henry. Bobbs-Merrill Company, 1957. 514 Pages; Illustrated; Index; \$6.00. A revised edition of a standard work first published in 1931, reissued in 1936. Of it Dr. Douglas Southall Freeman said: "The book with which to begin one's study of the period it covers and the book to which to return when everything else on the subject has been read."

WELLINGTON'S HEADQUARTERS: A Study of the Administrative Problems in the Peninsula, 1809-1814. By S. G. P. Ward. Oxford University Press, 1957. 219 Pages; Index; \$4.80. This is a book to save the soul of an adjutant general, a G, or any other staff officer who believes his problems are unique and not capable of solution. Wellington had neither mimeograph machines, radios, nor I&E officers, but he still had to move, feed, finance and administer varied types of troops over large distances. He had his troubles with the ZI—it's the same story in a historical setting. You can get by without reading this, but if you're a staff type you'll enjoy hearing of the other fellow's troubles.

documentation, a great deal of which was collected by the author at Indiana University. Professor Tomasic discusses the early history of Yugoslav communism. His analysis of Yugoslav communism during the war years and the immediate post-

war period is a little less convincing but still very informative. The discussion of the ideological struggle between Milovan Djilas and Tito is of great importance to any student of Communist affairs and constitutes a valuable contribution.

Whenever the author was able to use good source materials, the book is outstanding.

It is a pity, therefore, that some chapters—in the main those covering recent events—show traces of haste, superficiality and one-sided documentation. The author tends to confuse "Tito" with "Titoism" and, unfortunately, the problems of Titoism in its broader sense—the most important contemporary attempt to criticize the Stalinist state on authentically Communist or even Stalinist grounds—escape him.

The author tries to link Yugoslav Titoism to similar phenomena in the satellites and to Kremlin strategy. He also takes a stab at analyzing the recent and as yet undocumented Polish and Hungarian events. These experiments just did not come off. If the author had stuck to the subjects he knows well—and strategy is not one of them—he would have produced a very worthwhile book. The compromise between scientific analysis and off-the-cuff reporting (at long distance)—all this within minimum space—never should have been tried. But even with these shortcomings, Professor Tomasic still has given us an excellent history of early Yugoslav communism.

Classic on Communism

THE THEORY AND PRACTICE OF COMMUNISM:
An Introduction
By R. N. Carew Hunt
The Macmillan Company, 1957
286 Pages; Bibliography; Index; \$4.00

Reviewed by

COL. CHARLES A. H. THOMSON, Infantry,
USAR, former member of AUSA's Executive Council, who is on the staff of the Brookings Institution.

Four times since 1950, public demand has persuaded this publisher to bring out new editions of Hunt's little classic. This fifth revised edition brings the story up through the pronouncements of the twentieth Party Congress in February 1956, and includes notice of newer important works on Communism. It does this with the same caution and temperate judgment that mark earlier editions; and this book is valuable, less for the latest hot poop than for the solid introduction to a vital but difficult and complicated subject. Believing that it is necessary to grapple with the strongest points made by an adversary, rather than his weakest, the author has laid out the Marxist basis for Communism, the development of the European Socialist movement up to 1914, and the era of Leninism and Stalinism. His later chapters outline the development of Communism from 1945 to Stalin's death, give an estimate of the post-Stalin situation, and end with a short

conclusion. Here most of the new material is found.

Hunt stands with those who do not think the Soviet juggernaut has fundamentally changed direction, although the new collective leadership has got rid of some minor impediments and difficulties. It has downgraded the security system, and made life for the top executive more sane. It has abandoned, at least for the time being, "one-man leadership." It has tried and failed to do better by the consumer. It has made concessions to the collective farmers in order to increase agricultural supplies (industrial development depended on the increase), and has given greater freedom to the intellectuals. In foreign affairs, the new leadership is willing to go for a *détente*, provided no matter of principle or of essential interest is at stake.

The guide lines for the Soviet future were laid down at the twentieth Congress, but the concessions there made didn't amount to much, if the slogan "back to Lenin" is taken literally. If there is a real ideological downgrading of Stalin, some objectionable features might disappear. At bottom, however, the Communist system is driven to the use of fictions and coercion in its efforts to impose a single and inclusive pattern of perfect social integration. The Soviets today face a dilemma: whether to relax repression and invite unforeseen change; or to maintain repression, impair the flexibility and judgment on which progress depends, and invite unforeseen crisis. The USSR, however, is tremendously strong, and rigidity alone will not destroy her. But short of victorious war, an improbable outcome, she cannot impose her way of life on the West. And Western Communist parties could gain control only if the way were prepared by those who have fallen for the Marxist Utopia and have failed to face its consequences. As to the future political strength of the free world, Hunt says nothing at all. That is not his subject. But nothing in his analysis should cause us to despair of the outcome.

Inquiry into National Strategy

NUCLEAR WEAPONS AND FOREIGN POLICY
By Henry A. Kissinger
Harper & Brothers, for Council on Foreign Relations, 1957
455 Pages; Maps; \$5.00

Reviewed by

DR. JAMES D. ATKINSON, Assistant Professor of Government at Georgetown University, who has contributed several articles and reviews to ARMY.

In his foreword to *Nuclear Weapons and Foreign Policy* Gordon Dean says, "Dr. Kissinger's book is not easy reading if for no other reason than that the subject is highly complicated." That may, in some ways, forecast the tone of the

entire work, for indeed this is not light summer reading. What is vastly more important, however, is that Dr. Kissinger's scholarly and thought-provoking book analyzes in a penetrating fashion some of the central problems of the age in which we are fated to live.

The book grew out of the ideas generated by a panel of military and foreign policy authorities set up by the Council on Foreign Relations with a view toward examining "all factors which are involved in the making and implementing of foreign policy in the nuclear age." Dr. Kissinger became the study director of the group and, although the book grew "out of its deliberations," it is essentially his own analysis of the impact of nuclear weapons on the making and implementing of foreign policy with special reference to the United States *vis-à-vis* the Soviet Union and Communist China.

Part One of *Nuclear Weapons and Foreign Policy*, "The Problems of Survival," presents the relation between force and diplomacy and discusses some of the Soviet Union's advantages in today's cold warfare. Here Dr. Kissinger comes to grips with the issues which have aggravated American military policy for the last decade: the lack of an agreed strategic doctrine shared by all the services and, even more significant, the concept—amounting almost to unshakable dogma—that any future war would be all-out. Indeed, many of our military planners have begun to suffer from virtual color blindness in that they can see only the white of total peace or the black of total war and are unable to visualize the intermediate range of colors in the military spectrum. We find our military policy, therefore, increasingly geared to deal with future nuclear "Pearl Harbors," but unable to cope with the day-to-day moves of an enemy whose strategy looks forward to warfare's developing future rather than backward at its past.

Part Two, "Technology and Strategy" discusses the general problem of nuclear weapons in warfare, the problems of limited war, and the possibility of limited nuclear war as well as related problems of disarmament and international inspection. Dr. Kissinger argues convincingly that the United States possesses many advantages in the development of a strategy of limited nuclear war inasmuch as the Soviet Union, while being able to concentrate in one particular field and produce results, may be unable to "compete with us in developing the diversified capability for a limited nuclear war—the wide spectrum of weapons, means of transportation and elaborate systems of communication."

The third major part, "Strategy and Policy," discusses American strategy *vis-à-vis* our allies, the uncommitted nations, and the policy of the Sino-Soviet bloc.

The author is at his very best in the section on Sino-Soviet strategy. The need for a flexible military policy for America is most cogently demonstrated when he states (referring to the Communist challenge to the West) that "the tendency of the powers which represent the *status quo* [is] to confront the revolutionary power with methods they learned in a more secure environment . . . but against a revolutionary power, tactics of conciliation are self-defeating. Here safety can be found only in a precautionary policy which stakes an assessment of future menace against current protestations of innocence." There is the heart of the matter. Against an adversary whose evaluation of war is based on the idea of its political consequences and the hydra-headed forms which it may assume, simplified answers such as "massive retaliation" are unlikely to suffice. Instead, the national policy of the United States should be served by a military strategy which provides a *choice of capabilities* ranging all the way from the employment of armed force in a minor police action to the complete destruction of the enemy's military power.

The possession of a wide range of capabilities by our the armed forces is, of course, highlighted by Khrushchev's elimination of Malenkov, Molotov and Kaganovich on the alleged grounds that "that group . . . have been obstructing with all available means the implementation of measures for the relaxation of international tension and the consolidation of peace in the whole world." For nothing could be better calculated to reduce our defense capabilities (already tending toward reliance on an all-out air capability) than to lull us into a belief that a real change has taken place in the Soviet system regarding Marxist-Leninist concepts of warfare as an instrument of policy. Dr. Kissinger prophetically warns against this type of maneuver when he points out that any idea of a real change in Soviet purposes "would be tantamount to asserting that the Soviet leaders have ceased being Bolsheviks . . . [since] a genuine settlement between different social systems can come about in Marxist eyes only with the end of the class struggle. . . ."

The final chapter is the author's conclusions on the conduct of American diplomacy and the formulation of strategic doctrine. He believes that "it would still be the wisest course to move in the direction of a single service initially by amalgamating the Army and the Air Force." He goes on to say that "the Navy's strategic problems may remain sufficiently distinct not to require integration, and in any case resistance in the Navy to complete unification would be so bitter as to obviate its advantages." Surely this is fallacious reasoning. If there are valid

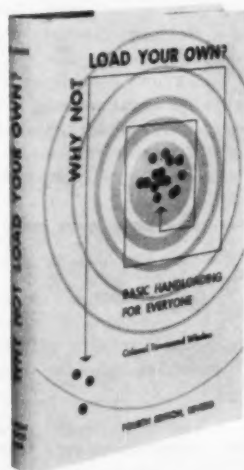
reasons for complete unification, then "resistance" by one of the services, however strong, should not be a barrier. If, there are logical reasons against the single-service concept, they may very well apply to *each* service rather than to any one.

Dr. Kissinger also suggests that, since complete unification "is probably out of the question," a "Strategic Force" and a "Tactical Force" be created in lieu of separate Army and Air Force units while, at the same time, the traditional Army and Air Force administrative and training structure be retained. The Strategic Force "would include the Strategic Air Command, the Air Defense Command, the units of the Army required to protect overseas bases and the units of the Navy which are to participate in the retaliatory attack." The Tactical Force would be composed of "the Army, Air Force and Navy units required for limited war." While this is a most interesting concept, it seems to overlook three points about which we have had past practical experience as opposed to theoretical study: (1) The difficulty of distinguishing between "offensive" and "defensive" weapons and forces (and hence their service assignment) which is inextricably bound up with the entire question of defense, limited war, and full-scale war. (2) Difficulties in the past have not arisen through

the existence of *separate* services, but rather through lack of unified command and staff structures. Indeed, there is much evidence that the spirit of competition—one of man's natural drives—among distinct services, when properly channeled and harnessed by a unified command structure, works as a positive contribution to success in war. (3) The separation of the training process from the proposed "Strategic" and "Tactical" operating "Forces" does not seem logical. Training should be one part of an *entire* process, and our past experience suggests that the closest connection between training and operations with cross-fertilization of ideas and techniques has proved most advantageous to the national defense structure.

These minor criticisms are not intended to disparage Dr. Kissinger's inquiry into our national strategy. The formulation of military policy was, once upon a time, a kind of luxury which Americans could indulge as the fancy struck them. Today, the proper military policy—the grand strategy—of the United States is a matter of national survival. As such, every soldier and every thoughtful civilian must do his homework in a field we dare not reserve either for the expert or the dilettante. To that end *Nuclear Weapons and Foreign Policy* is an outstanding contribution.

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